



THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

নং 362 দিশপুৰ, বুধবাৰ, 9 আগষ্ট 2023, 18 শাওণ, 1945 (শক)
No. 362 Dispur, Wednesday, 9th August, 2023, 18th Sravana, 1945 (S. E.)

GOVERNMENT OF ASSAM
ORDERS BY THE GOVERNOR
DEPARTMENT OF HOUSING AND URBAN AFFAIRS

NOTIFICATION

The 24th July, 2023

eCF No.340305/2023/115.- In exercise of the powers conferred by the Sub- Section (2) and (3) of section 10 of the Assam Town & Country Planning Act, 1959 (as amended) read with Rule 6 of the Assam Town and Country Planning (Publication of Master Plan and Zoning Regulations) Rules 1962, the Governor of Assam is pleased to publish the following notice regarding the publication of the Final Master plan for Digboi.

Notice for the Publication of Final Master Plan for Digboi.

1. It is notified that the Final Master plan for Digboi is prepared by the Directorate of Town & Country Planning, Government of Assam and adopted by the State Government under sub section (2) and (3) of Section 10 of the Assam Town and Country Planning Act, 1959 (as amended) read with Section 6 of the Assam Town and Country Planning (Amendment) Rule, 1962 for the area described in the schedule below, is hereby published.
2. The Final Master plan with all relevant papers and maps may be inspected free of cost during the office hours at the office of the Director, Town & Country Planning, Assam, Dispur, Guwahati-6, the Deputy Director, Town & Country Planning, District Office- Dibrugarh, office of the Chairman, Digboi Municipal Board and Margherita Revenue Circle Office. Copies of the Final Master Plan is also available in the office of the Director, Town & Country Planning, Dispur, Guwahati-6 and Deputy Director, Town & Country Planning, District Office- Dibrugarh for sale on payment.

SCHEDULE

District	:	Tinsukia
Revenue Circle	:	Margherita
Block	:	Margherita
Mouza	:	Makum & Tingrai
Master Plan	:	Digboi
Master Plan Area	:	29.18 Sq.km
Urban Area	:	9.33Sq.km. DMB (4.03 Sq.km) + Digboi Oil town (5.30 Sq.km)
Rural Area	:	19.85 Sq.km

REVENUE AREA INCLUDED IN THE MASTER PLAN FOR DIGBOI

TOWN AND VILLAGE	MOUZA	REVENUE CIRCLE	BLOCK
Digboi Town	Makum	Margherita	Margherita
Digboi Oil Town			
AOC Block 2, Ndpt.			
Bapapung NO. 2			
Bogapani T.E. 27 Block NO. 4 (PART)	Tingrai		
Borbil Gaon No. 1	Makum		
Borbil Gaon No. 2 (Bogapani)			
Borbil Gaon No. 3			
Gulai Gaon No. 1			
Gulai Gaon No. 2			
Gulai AOC Block Gaon			
Gulai Gaon No. 3			
Gulai Gaon No. 5			

DESCRIPTION OF BOUNDARIES

North	:	Bogapani T.E
South	:	Upper Dihing Bonanchall
East	:	Upper Dihing Bananchall, 3 No. Borgulai
West	:	Upper Dihing Bananchall, 2 No. Barbill

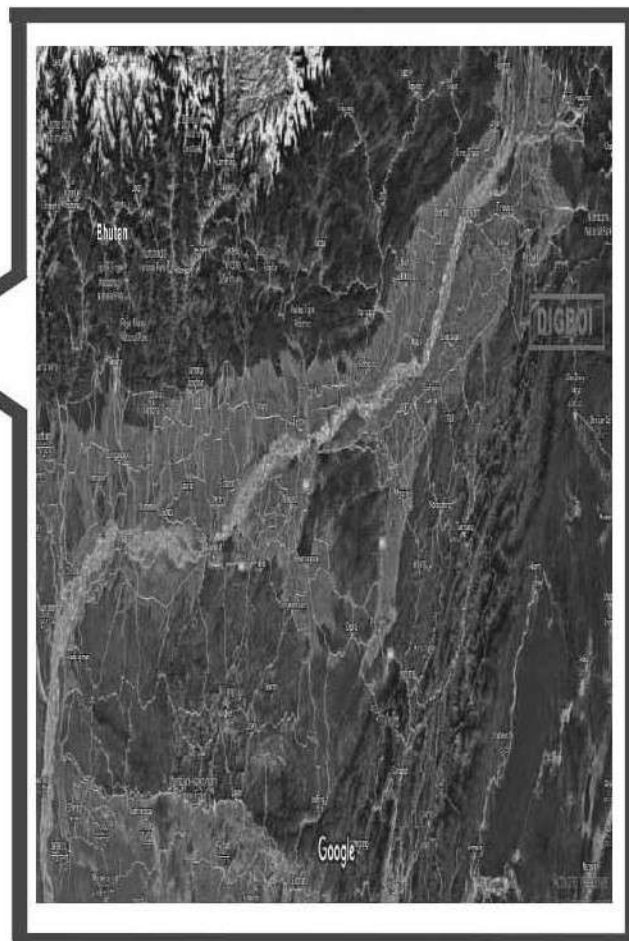
KAVITHA PADMANABHAN,
Commissioner & Secretary to the Government of Assam,
Department of Housing and Urban Affairs,
Dispur, Guwahati-6

CHAPTER - 1

1. INTRODUCTION TO MASTER PLAN AREA

1.1 Location

Digboi is a medium range town of Tinsukia District. The town itself has a natural scenic beauty. Digboi is situated at a distance of 36 km towards north-west from district head – quarter town, Tinsukia, 84 km from Dibrugarh town and 526 km from the state capital Dispur. The new NH-215 & NH-315 is passing through Digboi town. The geographical location of Digboi town is 27.38° north latitude and 95.63° east longitude and situated 150.140 M above mean sea level.

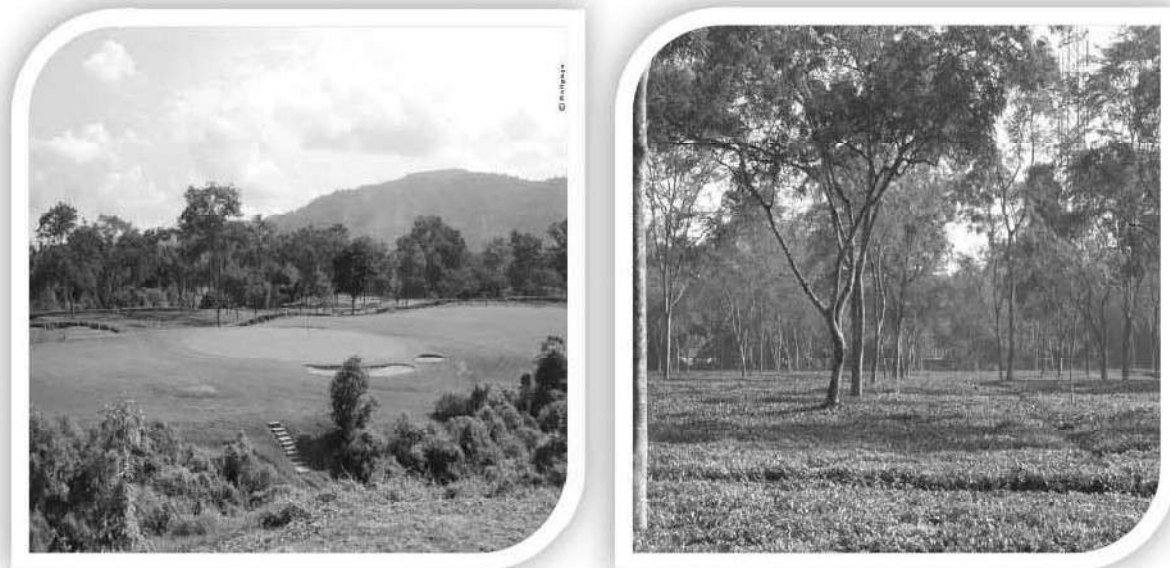


1.2 Regional Setting

Digboi region falls in the north-eastern part of India in the Upper Assam Valley. The Master plan Area is situated on both flat land and hilly areas. The municipal area and rural area are mainly situated on flat land. Oil township area is also situated on both flat land and hilly areas. Oil drains flowing between the railway line and the western boundary of the town. This natural stream along with seven other natural streams collects the storm water that is generated in the present town boundary and all of these stream's flow from south to north. The surrounding areas of Digboi are mainly covered by reserve forest and tea gardens.

1.3 Brief History of the town

It is said that the town Digboi gets its name from the phrase “dig-boy-dig”, which is what the Britishers told the labourers as they dug for crude oil.



History tells us that a historical event was happened in a remote corner of Assam in the midst of the dense malaria infected jungles by a band of intrepid pioneers searching for black gold, i.e., coal. Italian engineers, commissioned by the Assam Railway and Trading Company (AR & TC), to build a railway line from Dibrugarh to Margherita accidentally discovered oil at Digboi, when oil was discovered in remote areas of Digboi, there was no habitation in its immediate neighbourhood. The jungle was dark and swampy. The forest was so thick and the undergrowth was also so dense that sunlight could never reach the ground.

The town history begins in 1867, when a small group of persons from AR&TC found their elephants legs soaked in black mud, that smell somewhat like oil. The path for the growth of oil industry in India began when the oil was found in the dense forest in an around Digboi region. As more and more wells were

drilled and more oil found, the area developed, the population grew and the township of Digboi was set up with schools, markets and well-equipped hospital. The AR & TC started drilling the first oil well in Digboi near their station at Borbil in September 1889. Digboi refinery is known as birthplace of the oil Industry in India. It was commissioned on 11 December 1901. It has the distinction of being Asia's first refinery and one of oldest still in operation. The first lot of kerosene produced from Digboi Refinery appeared in the market on 2nd January 1902.



Presently Digboi is a revenue town under Tinsukia district of Assam. Digboi Municipal Board was notified in the year 1960 comprising 4(four) wards. In order to meet the growing demand of the public, the Govt. of Assam on 29th April 2003, the existing 4 (four) wards were bifurcated into 8(eight) wards. Again, in the year 2021, the existing 8 wards were bifurcated into 10 wards comprising the same area. As per 2011 census of India, Digboi town has been categorised as class III towns of Assam.



Digboi was originally an industrial town and at present day also it is able to attain the place in the map of Assam as well as in the map of India as an industrial town due to the development of Oil Industry, Assam oil company (AOC) set up a refinery at Digboi, which has raised the importance of this town and this importance has been further strengthened due to the fact that Digboi is the gateway of some places of Arunachal Pradesh. A very prominent landmark of Digboi is the “Stillwell” road built in 1942, connecting to China. Process is going on to reopen this road for transportation. If it is re-opening within a short period of time, then Digboi will be emerging as a very important industrial town not only for Assam but also India as a whole.



Digboi town has been growing industrially as well as with other tertiary services coming up to serve the people of the town as well as its suburbs. In order to check the haphazard growth of the town and also to provide the basic services to the surrounding rural areas, the Town & Country Planning, District office Dibrugarh has prepared a “Master plan” for Digboi town. At this Juncture it is also essential to create a” Development Authority” to implement the guidelines, implications and plan proposals of the Master plan.

1.4 Climate

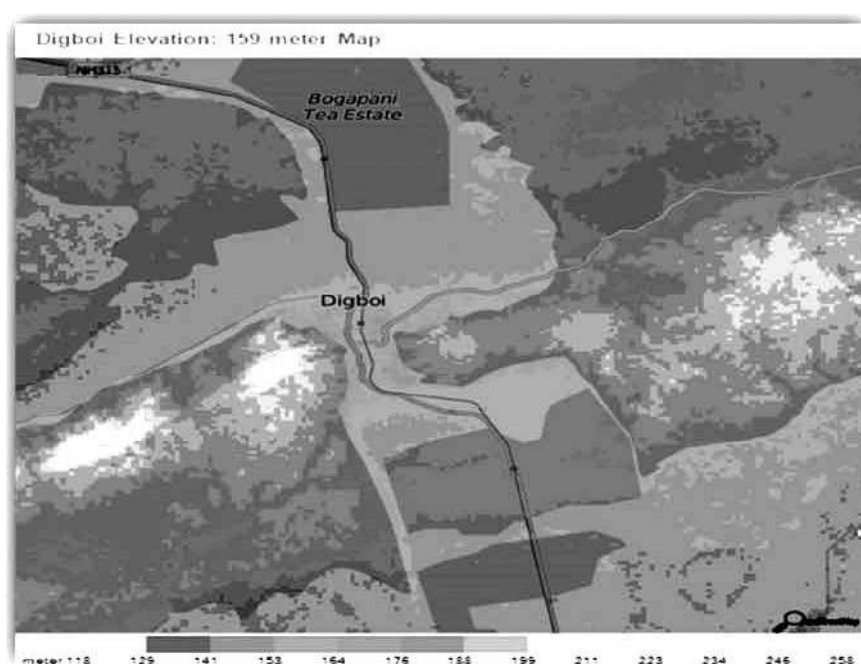
Bio-geographically Digboi area exhibits the properties of both Indian and Malayan sub-regions and represents the North India-Brahmaputra valley bio-geographical province and enjoys a tropical monsoon climate with a hot and wet summer and cool and usually dry winter. In the recent years due to global warming, the hot weather begins from the middle of April to the end of October. The annual minimum and maximum temperature vary between 5.5° Celsius to 38° Celsius. The mean monthly temperature is lowest in December-January and highest in June –July. The minimum and maximum relative humidity of Digboi varies

between 70% to 85%. Since the climate in the region is tropical, the rainfall is heavy as in other parts of the state. The rain associated with monsoon sets in by the middle of May reaches its peaks in July and continues till the end of September the average rainfall is 2231.1 (mm) in 2019 and normal rainfall is 2354.9 (mm) in 2019.

1.5 Topography

Topography is the study of the shape and features of the surface of the earth. The topography of an area could refer to the surface shapes and features themselves, or a description in maps. In modern usage topography involves generation of elevation data in digital form. It is often considered to include the graphic representation of the landform on a map by a technique, including contour lines, hypsometric tints and relief shading.

Below is the Elevation map of Digboi, which display range of elevation with different colours. The map also provides idea of topography and contour of Digboi.



1.6 Soil Condition

The top soil of Digboi urban area adjacent to refinery is degraded due to extensive emitted chemicals and gases contaminate immediate environment. The major environment impacts due to refining process are the changes in soil stratification, decreased biotic diversity and alteration of structure and functioning of ecosystem. It also leads to air and water pollution, and biodiversity loss. In spite of that, the quality of soil is good in the outskirts of the urban area with sufficient rainfall in the region which is conducive for the growth of vegetation.

1.7 Settlement Pattern

As is common in other parts of India, Digboi also experienced the settlement of traders, construction workers and other service provider's along with the Bengal's and North-India people in connection with refinery and related works since the early days. This slow and steady growth of settlers together with the decision of many retired employees of the refinery to settle in the town increases the population of the town. Thus, at present in Digboi one can see two townships with stark and contrast separated only by some boundary demarcations of Digboi refinery. Refinery township has the spacious bungalows, the sprawling lawns, gracious life style still reminiscent of the old British rule with all modern infrastructures. On the other hand, settlement area population without mush of urban infrastructures, although entire population of the refinery township depends on the settlement area for their day to day needs as all major markets have developed here.

1.8 Rural-Urban-Scenario

Digboi Master plan covers an area of 29.18 sq.km., out of this urban area consists of 9.33 sq.km. and 19.85 sq.km. occupy by rural area. As per 2011 census urban area population are 34462 persons and rural population are 19347 persons. So, in DMPA, urban population consists of 64.04%. Since Digboi originally developed as an industrial town, that's why the percentage of urban population is generally high in comparison to rural population within master plan area.

TABLE NO: - 1
Urban & Rural Area Population Figure

Name of the Master plan Area	Category of Area	Area in sq.km	Population in 2011
Digboi Master plan	Urban	9.33	34462
	Rural	19.85	19347
Total		29.18	53809

Source: - Census of India, 2011

1.9 Physical Growth and Expansion of the town

Physical growth and expansion of Digboi town mainly taken place due to the Digboi refinery which was established in the year 1901. Digboi master plan area covering an area of 29.18 Sq. km with two revenue mouza, 10 Town Sheet cadastral map of Digboi municipal area, 14 town sheet cadastral map of Digboi Oil township, 14 cadastral map of villages and with a population of 53809 persons. Digboi refinery is the world's oldest refinery and still in operation. Digboi is now Headquarter of Assam Oil Division of India Oil Corporation Limited. The growth of

the town also takes place due to the existent of tea industry in the region and as well as ancillary activities related to the oil industry growing in the region in the recent years.

For planning purpose Digboi master plan area has been divided into the following zones: -

A. The urban zone comprises the following areas:

1. 10 (ten) wards under Digboi Municipal Board.
2. Digboi oil town
3. Urbanized area adjacent to the town.

B. The rural zone comprises the following villages and tea gardens.

1. AOC Block 2.
2. Bapapung No.2
3. Bogapani T.E 27 Block No.4 (part)
4. Borbil Gaon No.1(1st& 2nd part)
5. Borbil Gaon No.2 (Bogapani) (2nd part)
6. Borbil Gaon No.3 (2nd part)
7. Gulai AOC Block Gaon
8. Gulai Gaon No.1
9. Gulai Gaon No.2
10. Gulai Gaon No.3
11. Gulai Gaon No.5

1.10 Need of the Master plan

The concept of planning has evolved gradually through the changing demand of man and environment but has assumed greater significance and wider connotation with the inception of the present century. The rapid pace of industrial expansion and urbanization has hastened the growth of urban centres. The forces operating behind urban expansion in recent years is becoming more and more difficult to direct or to control. To check the unplanned and haphazard growth of the towns, the principles of planning has been accepted as urgent an imperative.

A town is composed of land, building, people, utilities, services and transportation. It is a large configuration of more or less permanent settlers engaged in diverse economic activities. As the town grows, it attracts larger population; it enlarges the scope of their activities, while the complexity of living distorts the well-organized concept of the urban space organization.

Master plan is a statutory instrument for the provision of long-range vision for the built environment of a community. It guides the appropriate use of lands

within a town and its adjacent areas in order to protect the public health and safety and to promote general welfare. Among other issues, the master plan can identify suitable locations for commercial, housing and mixed-use development; locations where the city/town should increase density, use redevelopment or intervene otherwise; opportunities to extend or improve open space, recreational areas and civic facilities; strategies for increasing economic development; environmental, historic strategies for solving congestion, improving transit services and also enhance the aesthetic beauty of the town. As a result, the master plan has a direct relationship to its citizens, whether we live, work or own a business.

The evils of unplanned growth of our towns have caused enormous problems such as shortage of living accommodation, traffic congestion, lack of sanitation and other community facilities and amenities. The growth of population and the potentiality of Digboi to be an industrially and commercially vibrant town in the near future had led the state Government to realize the importance of proper planned growth of the town and the preparation of the master plan for this purpose.

In order to translate the suggested developments for Digboi into action, it would be necessary to follow this master plan which is designed to regulate the future growth and to affect a uniform community. In preparing the master plan for Digboi, various surveys such as land-use, socio-economic etc. were carried out to understand the existing scenario of the town and to suggest the line of actions to be adapted.

It is highly desirable at this point that the citizens of Digboi should clearly understand the need for the master plan because a master plan is the city/town's long range plan and is important as it affects things we do every day and how we will do then in the future master plan guide city/towns decisions about important issues like what economic development strategy the city town should take; where certain types of business should the town try to attract; how much parking should be provided in neighbourhood; what improvements should be made to parks and recreations centres; How to protect our natural resources; why certain areas are designed as historic places. So, when we wonder why a building is allowed to be located somewhere, why certain streets are one-way streets, why a park has been built in our neighbourhood; a good place to start looking is the master plan. As such the most desired results could be positive civic interest and greater confidence which will create a conducive environment and our descendants will profit by our forethought or suffer from our negligence. What better work can we achieve than make their path easier, their homes more intimate, their public buildings more attractive and accommodating.

CHAPTER -2**2. DEMOGRAPHY****2.1 Total Population**

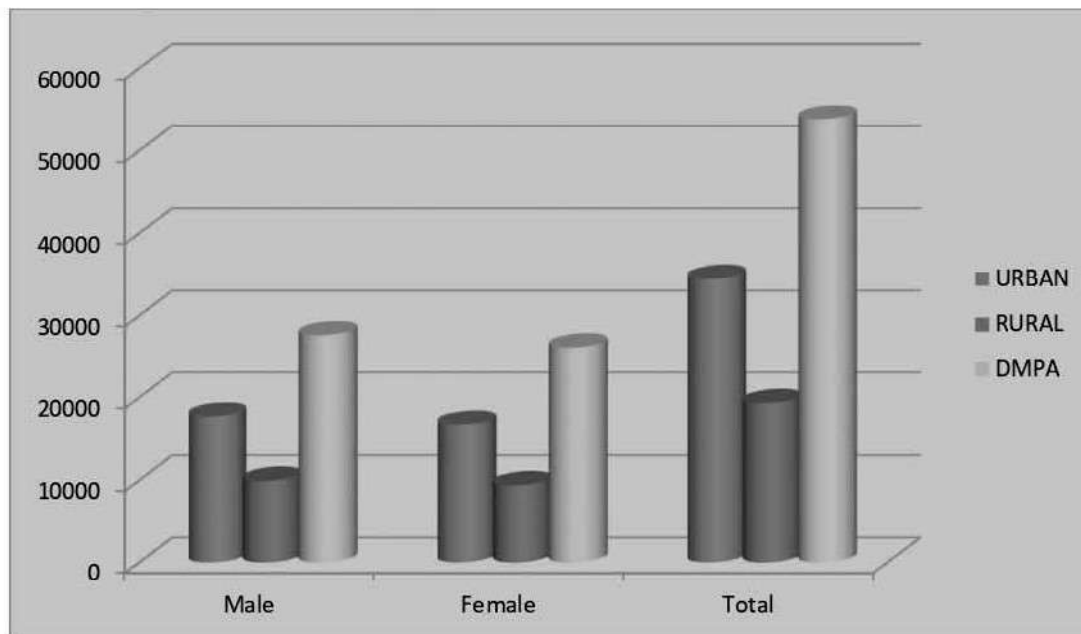
According to census of India 2011, the total population of Digboi master plan area is 53809 persons, out of which 21736 persons live within the Digboi Municipal Board, 12726 persons live within the Digboi oil town and 19347 persons live in adjacent rural area of the town. The following table shows the population distribution within Digboi master plan area.

TABLE NO - 2
Population Distribution in Digboi master plan area

Name	Total Population	Total Male	Total Female	0-6 years
Ward no.1	1731	894	837	128
Ward no.2	2993	1491	1502	247
Ward no.3 & 4	3818	2009	1809	340
Ward no.5	3235	1602	1633	253
Ward no.6 & 7	4385	2169	2216	329
Ward no.8	2485	1252	1233	180
Ward no.9	1750	865	885	149
Ward no.10	1339	682	657	119
Total Digboi Municipal Board area population	21736	10964	10772	1745
Digboi Oil town	12726	6753	5973	1033
Total Urban Area Population (A)	34462	17717	16745	2778
AOC Block 2.	678	348	330	57
Borbil Gaon No.1	2329	1169	1160	253
Borbil Gaon No.2	3903	2039	1864	398
Borbil Gaon No.3	3177	1635	1542	436
Bapapung No.2	528	270	258	47
Bogapani T.E.27 Block no.4	877	447	430	131
Gulai No.1	3996	2043	1953	403
Gulai Gaon No.2	1814	907	907	249
Gulai AOC Block Gaon	288	143	145	20
Gulai Gaon No.3	743	383	360	113
Gulai Gaon No.5	1014	549	465	218
Total Rural Area population(B)	19347	9933	9414	2325
Total Master plan Area Population (A+B)	53809	27650	26159	5103

Source: Census of India, 2011

Figure: -1
Male and Female population of Digboi master plan area in 2011



2.1.1 Population Growth Rate

The purpose to provide facilities and services in community is to meet the physical, economic and social needs of the people. It is a study and understanding of the growth, distribution, composition and other characteristics of the population and trend are therefore the basic requirements for the wider range planning programs. The objective of the master plan for Digboi is to cater to the various needs emerging from these studies in order to meet the aspirations of its residents for whom the plan is prepared.

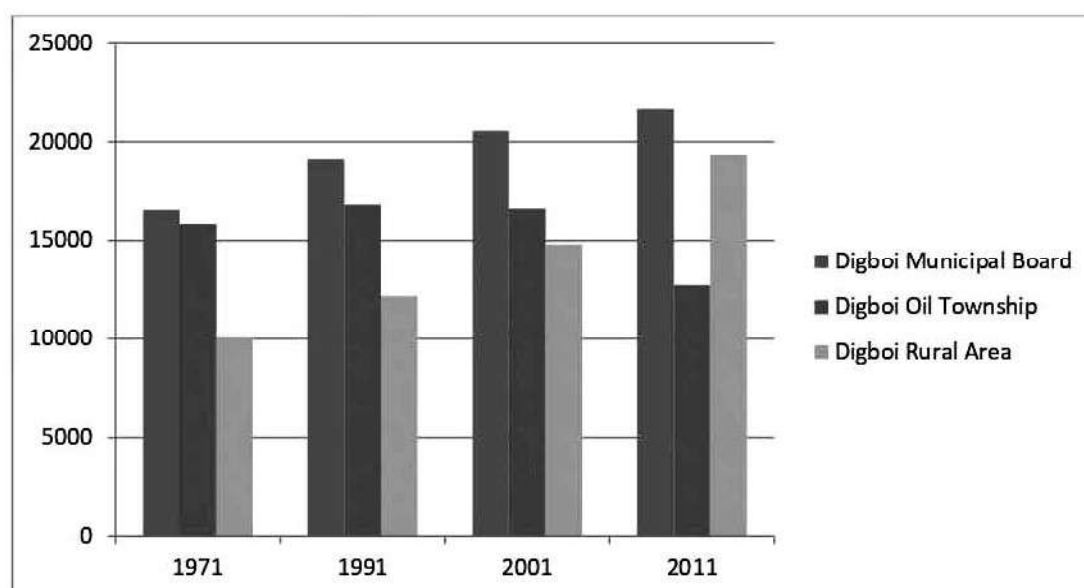
Digboi is revenue/notified town under Tinsukia district. Digboi Municipal Board was notified in the year 1960 comprising of 4(four) wards. Existing 4 wards were bifurcated into 8(eight) wards on 29th April 2003. Again, in the year 2021, the existing 8 wards were bifurcated into 10 wards comprising the same area. Digboi town had only 18235 persons in 1961. Digboi town consists of Digboi municipal board area and Digboi oil township area. According to 2011 census of India Digboi municipal board area population is 21736 persons and oil township Population is 12726 persons. As a whole the population of Digboi town in the year 2011 was $(21736+12726) = 34462$ persons, out of which the male population is 17717 and the female is 16745.

TABLE NO - 3

Growth of Population of Digboi Municipal Board,
Digboi Oil town & Digboi Rural Area

Year	Digboi Municipal Board		Digboi Oil township		Digboi Rural Area	
	Population	Percentage Increase	Population	Percentage Increase	Population	Percentage Increase
1971	16538	-	15850	-	10056	-
1991	19137	15.71	16796	5.97	12179	21.11
2001	20553	7.40	16590	-1.23	14818	21.67
2011	21736	5.76	12726	-23.29	19347	30.56

N.B. There was no census in Assam in the year 1981. Source: Census of India, Assam

Figure-2

The decadal growth of population in Digboi master plan area is shown in the following table.

TABLE NO - 4

Growth of population in Digboi Master plan Area

Year	Population	Decadal Increase of Population	Decadal Growth (%)
1971	42674	-	-
1991	48522	5848	13.70
2001	51761	3239	6.68
2011	53809	2048	3.96

Source: Census of India, Assam

The decadal Growth of population in Digboi master plan area from 2001 to 2011 is 3.96%.

Figure-3

Decadal Growth of Population of DMPA: 1971-2011

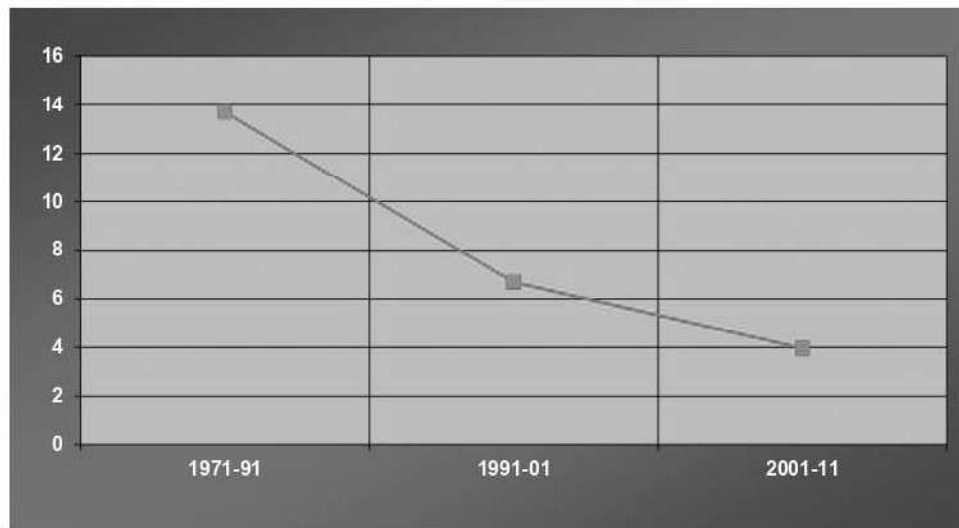
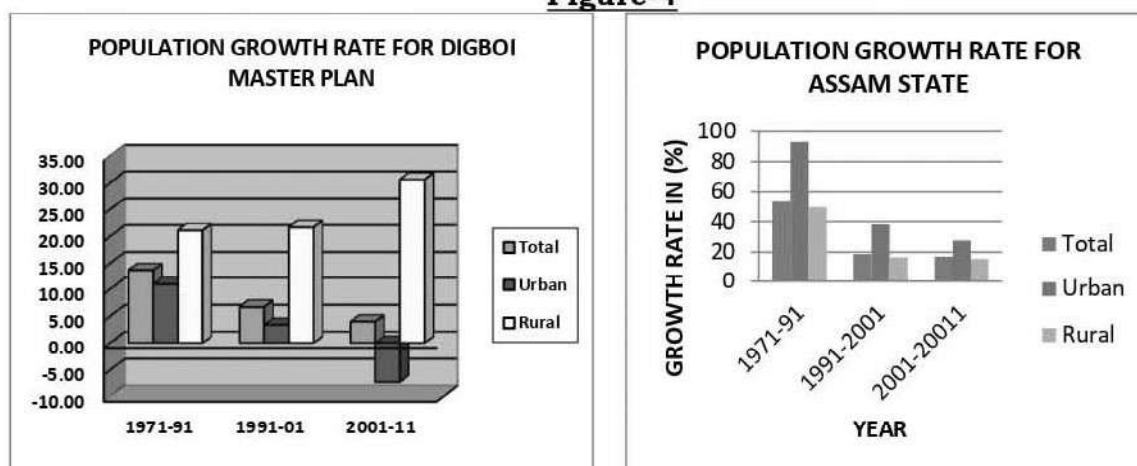


TABLE NO – 5
POPULATION GROWTH RATE OF ASSAM
AND DIGBOI MASTER PLAN AREA: -1971—2011

	POPULATION				GROWTH RATE IN %		
	1971	1991	2001	2011	1971-91	1991-2001	2001-2011
Assam State *							
Total	14.62	22.49	26.66	31.17	53.83	18.54	16.93
Urban	1.29	2.49	3.44	4.39	92.97	38.24	27.61
Rural	13.33	19.93	23.22	26.78	49.42	16.51	15.35
* Population in Millions							
Digboi Master plan *							
Total	42.44	48.11	51.96	53.81	13.70	6.68	3.96
Urban	32.38	35.93	37.14	34.46	10.94	3.37	-7.22
Rural	10.06	12.18	14.82	19.35	21.11	21.67	30.56
* Population in thousand							

Source:- Census of India

Figure-4

2.1.2 Population Density

The net density of population in Digboi urban area in 2011 is 3694 persons per sq.km and in rural area is 975 persons per sq.km. In the master plan area as a whole the density of population in 2011 is 1845 persons per sq.km.

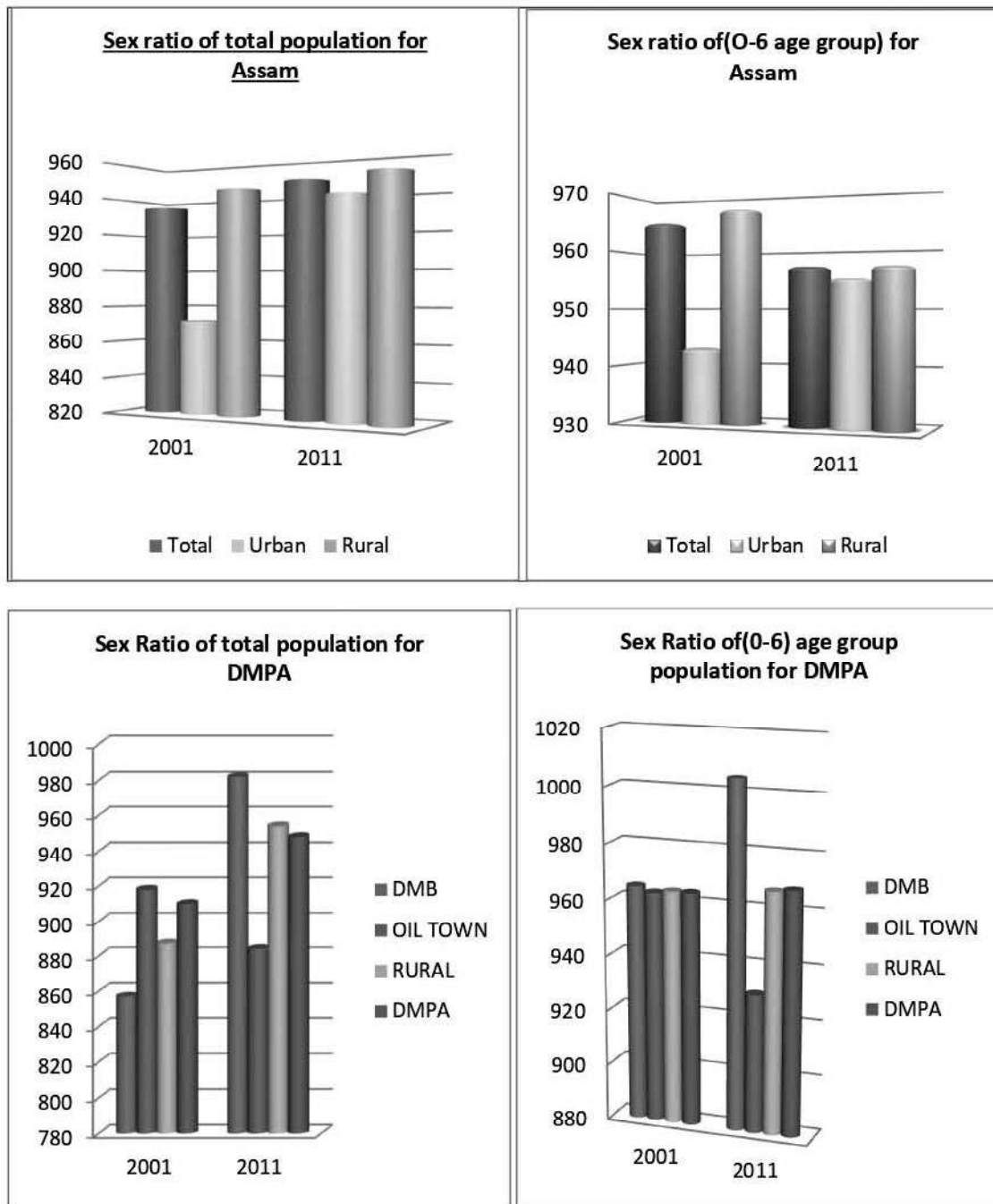
2.2 Sex Ratio

As per 2001 census, in Digboi Municipal Board area the sex ratio was 857, in Digboi oil town 918, in rural area 887 and the Master plan as a whole the sex ratio was 910. According to 2011 census report the sex ratio in Digboi Municipal Board area is 982, in Digboi oil town the ratio is 884, in rural area 948 and in the master plan area ratio is 938. The comparison of sex ratio in 2001 and 2011 in master plan area of Digboi is given below.

TABLE NO – 6
SEX RATIO

Year	SEX RATIO OF TOTAL POPULATION		SEX RATIO OF 0-6 AGE GROUP	
	2001	2011	2001	2011
Assam State *				
Total	935	947	965	957
Urban	872	939	943	955
Rural	944	950	967	957
Digboi Master plan *				
Digboi Municipal Board Area	857	982	965	1005
Digboi Oil town	918	884	963	930
Rural Area	887	948	964	967
Master plan Area	910	938	964	968

Source: Census of India, 2011

Figure-5

2.3 Literacy

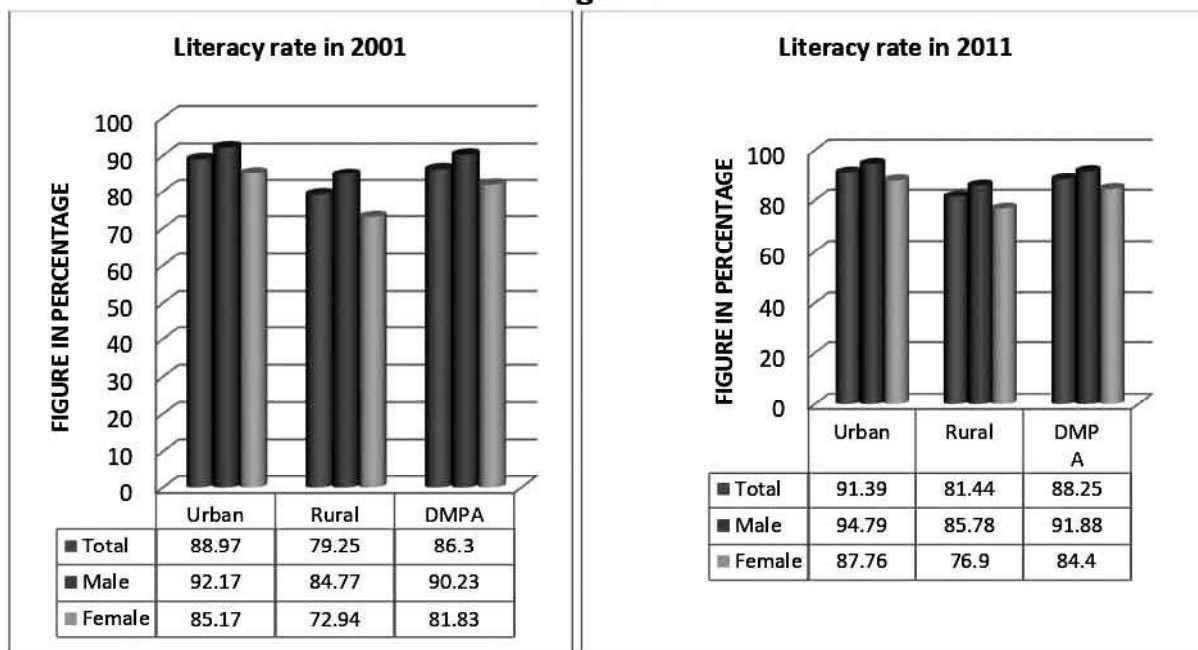
According to 2011 census report the literacy rate of Digboi Municipal Board Area is 92.08% and for Digboi oil town 90.77%, which is higher than the state urban literacy rate of 88.88%. The comparison of absolute literacy rate in 2001 and 2011 for Digboi master plan area is given below: -

TABLE NO - 7
LITERACY OF DMPA

	2001						2011					
	ABSOLUTE			LITERACY RATE (%)			ABSOLUTE			LITERACY RATE (%)		
	Urban area	Rural Area	Total (Master plan Area)	Urban area	Rural Area	Total (Master plan Area)	Urban area	Rural Area	Total (Master plan Area)	Urban area	Rural Area	Total (Master plan Area)
Person	29656	9745	39401	88.97	79.25	86.30	29022	13458	42480	91.39	81.44	88.25
Male	16375	5555	21930	92.17	84.77	90.23	15493	7294	22787	94.79	85.78	91.88
Female	13281	4190	17471	85.17	72.94	81.83	13529	6164	19693	87.76	76.90	84.40

Source: Census of India, Assam

Figure-6



2.4 Working and Non-Working Population

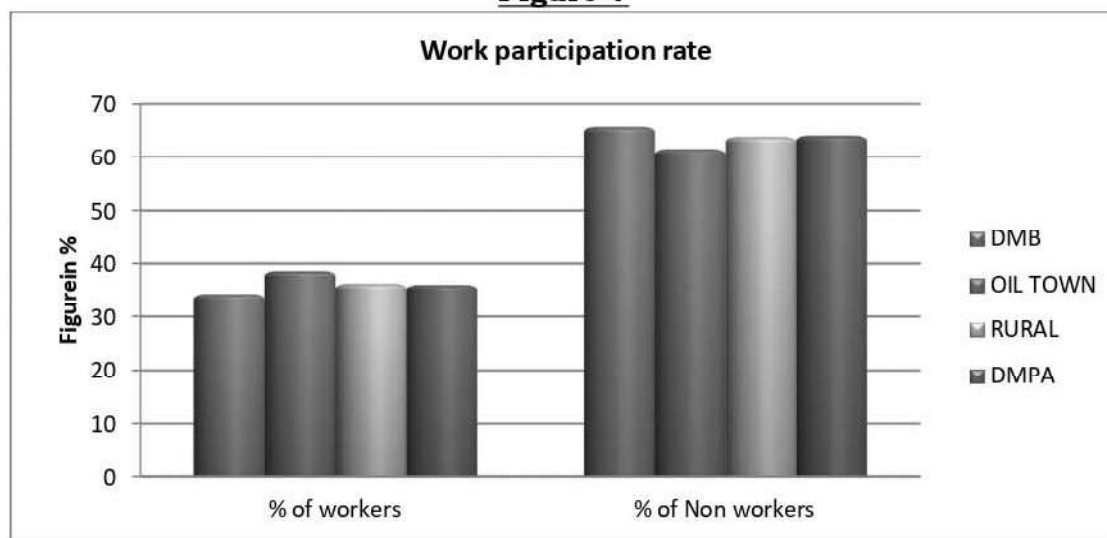
The total number of workers in Digboi Municipal Board Area has been increased from 6692 persons in 2001 to 7454 persons in 2011. The rate of increase is 11.39%. Out of 7454 persons the number of male workers is 6337 and the female workers are 1117. In total workers the percentage of male workers are 82.15% and the female workers are 17.85%. The male works participation rate is 57.53% and female is 13.22%. The workers and non-workers in Digboi master plan area in 2011 is given below:

TABLE NO – 8
Workers and Non-Workers in Digboi master plan area

Category	Digboi Municipal Board			Digboi Oil town			Rural Area			Total (Master plan Area)		
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
Total Workers	7454	6337	1117	4904	4114	790	7006	5456	1550	19364	15907	3457
Main Workers	6417	5611	806	4611	3916	695	5417	4595	822	16445	14122	2323
Marginal Workers	1037	726	311	293	198	95	1589	1003	586	2919	1927	992
Non-workers	14282	4627	9655	7822	2639	5183	12341	4477	7864	34445	11743	22702
Works participation Rate (%)	34.29	57.8	10.37	38.53	60.92	13.23	36.21	54.93	16.46	35.99	57.53	13.22
Proportion of Non - workers (%)	65.71	42.2	89.63	61.47	39.08	86.77	63.79	45.07	83.54	64.01	42.47	86.78

Source: Census of India, Assam

Figure-7



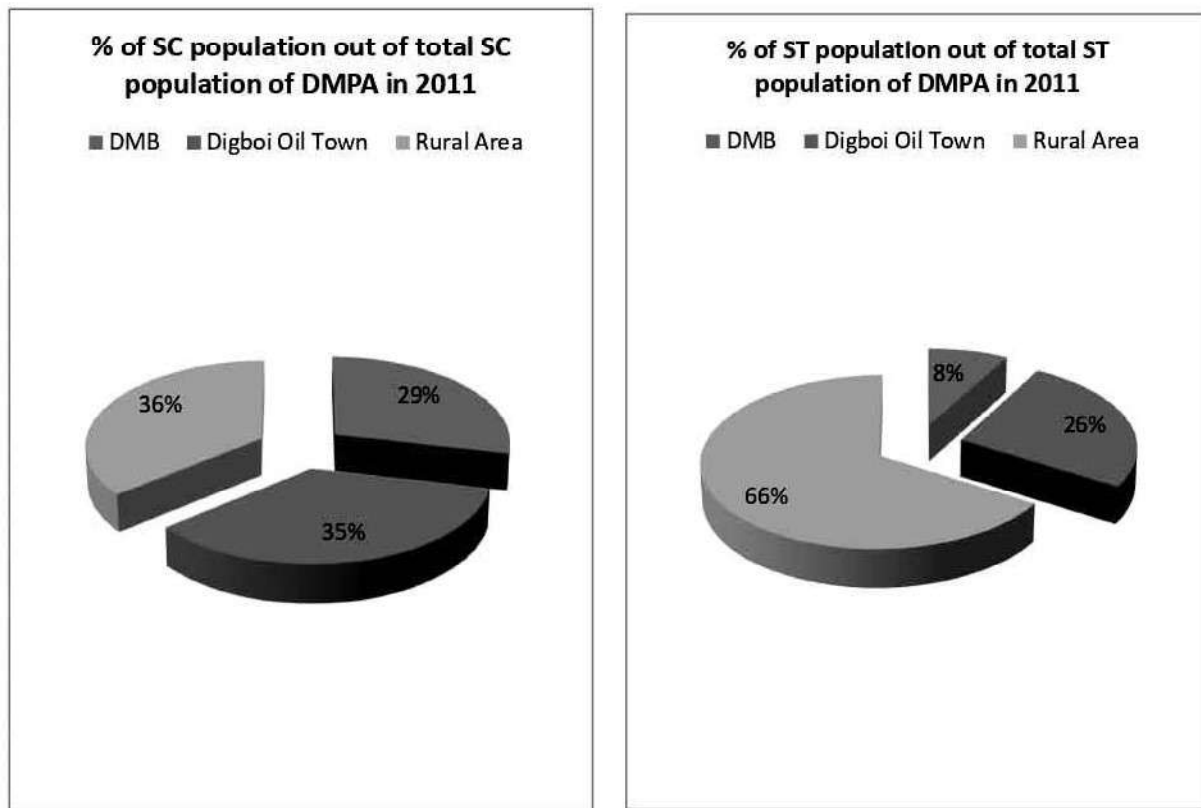
2.5 SC-ST Population

In Digboi Municipal Board Area, as per 2011 census report there are 694 Schedule Caste (SC), out of which the number of male's are 367 and female are 327. The Schedule Tribe (S.T) population are only 125, out of which males are 58 and the numbers of females are 67. The SC and ST population for the whole Master plan Area of Digboi as per 2011 census are given in the following Table:

TABLE NO - 9
SC-ST Population of Digboi Master plan Area

Area	SC			ST		
	Person's	Male	Female	Person's	Male	Female
Digboi(MB) ward no.1	24	14	10	41	19	22
Digboi(MB) ward no.2	88	39	49	11	6	5
Digboi(MB) ward no.3 & 4	339	181	158	15	7	8
Digboi(MB) ward no.5	22	13	9	4	2	2
Digboi(MB) ward no.6 & 7	73	36	37	10	4	6
Digboi(MB) ward no.8	28	12	16	14	5	9
Digboi(MB) ward no.9	89	53	36	6	4	2
Digboi(MB) ward no.10	31	19	12	24	11	13
Sub- Total Digboi MB	694	367	327	125	58	67
Digboi Oil town	856	413	443	421	216	205
Bogapani T.E.27 Block no.4	37	14	23	8	4	4
Gulai Gaon No.1	369	203	166	196	93	103
Gulai Gaon No.2	5	2	3	13	7	6
AOC Block 2 Ndpt.	16	10	6	15	9	6
Bapapung No.2	14	5	9	14	6	8
Borbil Gaon No.1	162	79	83	112	50	62
Borbil Gaon No.2(Bogapani)	156	76	80	215	113	102
Borbil Gaon No.3	99	56	43	487	249	238
Gulai AOC Block Gaon	6	2	4	13	7	6
Gulai Gaon No.3	2	1	1	2	1	1
Gulai Gaon No.5	6	5	1	10	7	3
Sub- Total Rural Area	872	453	419	1085	546	539
Grand Total (MASTER PLAN AREA)	2422	1233	1189	1631	820	811

Source: Census of India, Assam

Figure-8

2.6 House Hold Density and Size

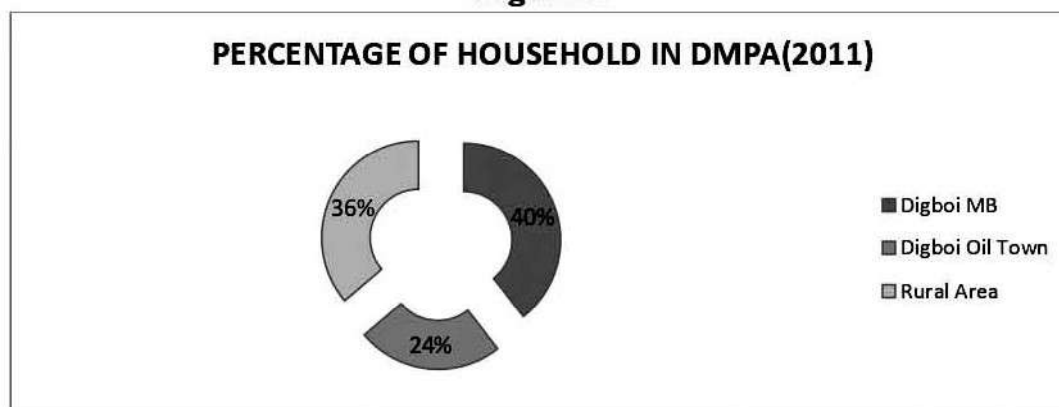
According to 2011 census report, there are 4643 number of households in Digboi Municipal Board are, 2865 number of households in Digboi oil town and 4260 number of households in rural area of master plan. In master plan area of Digboi as whole the number of households is 11768. The total number of populations in Digboi master plan area as per 2011 census is 53809 persons. As such the household size in master plan area are 4.57 persons per household. In Digboi master plan area the land used for residential purpose is 407.36 hectare except the land use for residential purposes in Digboi oil town, as such, the residential density is 21.85 household per hectare. The number of households in 2011 for Digboi master plan area is given below.

TABLE NO - 10
NO. OF HOUSEHOLD IN DMPA IN 2011

Area	No. of Household
Digboi (MB) ward no.1	381
Digboi (MB) ward no.2	634
Digboi (MB) ward no.3 & 4	778
Digboi (MB) ward no.5	740
Digboi (MB) ward no.6 & 7	959
Digboi (MB) ward no.8	512
Digboi (MB) ward no.9	352
Digboi (MB) ward no.10	287
Sub- Total Digboi MB	4643
Digboi Oil town	2865
Sub- Total Digboi Urban Area	7508
Bogapani T.E.27 Block no.4	180
Gulai Gaon No.1	358
Gulai Gaon No.2	896
AOC Block 2 Ndpt.	165
Bapapung No.2	105
Borbil Gaon No.1	549
Borbil Gaon No.2(Bogapani)	696
Borbil Gaon No.3	875
Gulai AOC Block Gaon	53
Gulai Gaon No.3	160
Gulai Gaon No.5	223
Sub- Total Rural Area	4260
Grand Total(MASTER PLAN AREA)	11768

Source: Census of India, Assam

Figure-9



2.7 Population Projection

Population projection is a forecasting tool that helps to estimate the changes in population size and demographic structure. It is mandatory for the Govt. Policy makers and planners of Assam, in order to determine the future demand for basic human needs such as food, water, education, energy and services and to forecast future demographic characteristics.

The main objective is to provide or undertake activities aimed at achieving population stabilization, sustainable economic growth, social development and environmental protection by 2041.

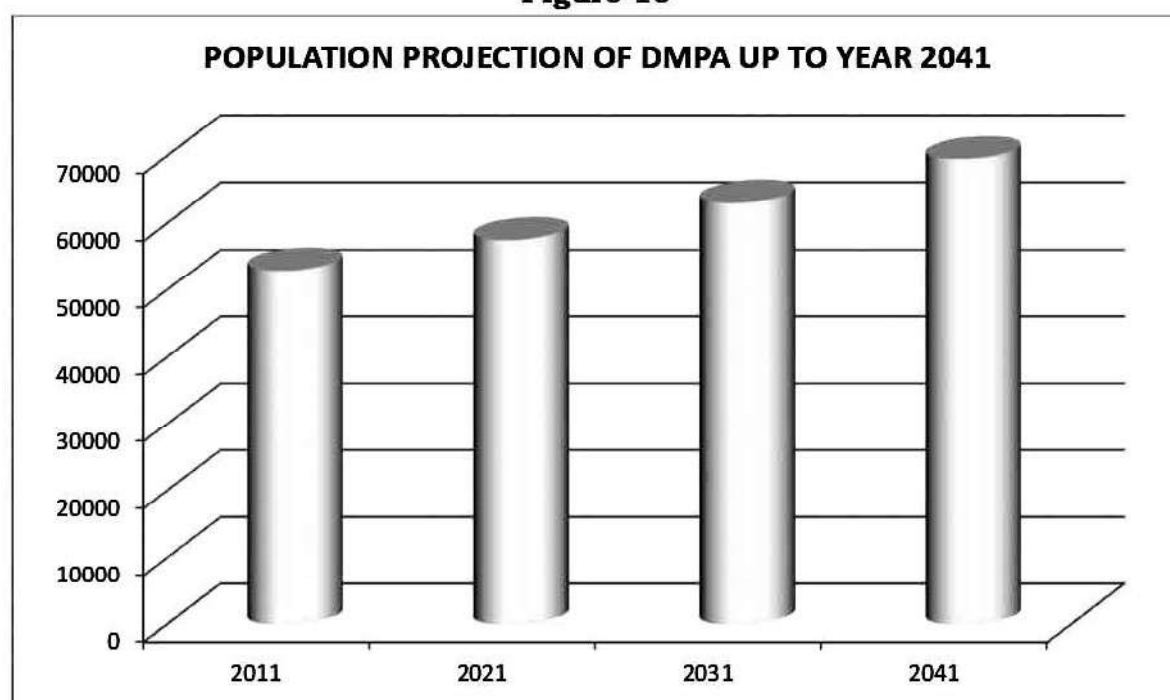
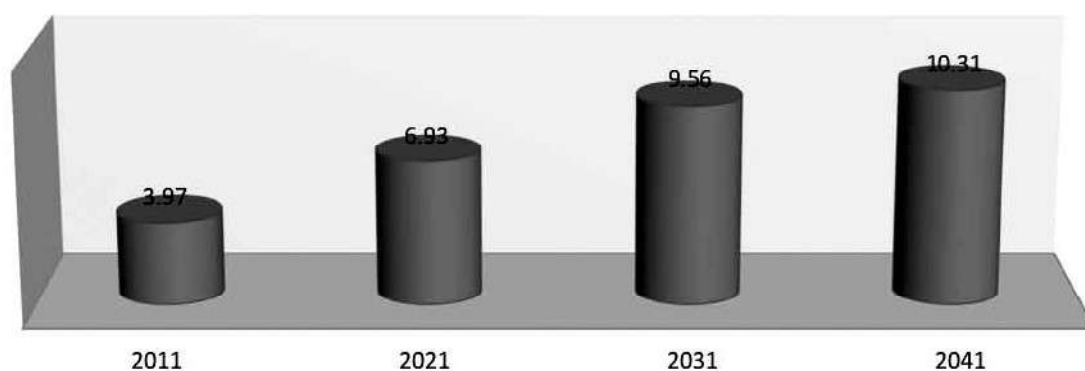
Population projection is a scientific attempt to keep into the future population scenario, conditioned by making certain assumptions, using data to the past available at that point of time. Assumptions used and their probability of adhering in future forms a critical input in this mathematical effort. Predicting the future course of human fertility and mortality is not easy, especially when looking beyond much further in time. Medical and health intervention strategies, food production and its equitable availability, climatic variability, socio-cultural setting, economic condition and a host of other factors influence population dynamics, making it a somewhat unpredictable exercise. Therefore, much caution must be exercised when either making or using the population projection and the context of various conditions imposed, should not be lost sight of on the basis of past behaviour and the likely future scenario assumed.

The final population projections of Digboi master plan area have thus been arrived at with the entire base population of 1971 accounted for as the natural population, by adding to the natural population the increase due to the natural growth plus the increase due to emigrational flow of trade and commerce including natural increase of migrants. The following table shows the population projection up to 2041 for Digboi master plan area.

TABLE NO - 11
POPULATION PROJECTION OF DIGBOI MASTER PLAN AREA 1991-2041

Year	Master Plan Area Population	% Of increase
1991	48522	-
2001	51761	6.68
2011	53809	3.97
2021	57538	6.93
2031	63038	9.56
2041	69538	10.31

Source:- Calculated by T&CP, Dibrugarh

Figure-10**Percentage of Growth of population projection**

Source: Digboi master plan area population of 1991, 2001 and 2011 are from Census of India, Assam and 2021, 2031 and 2041 population figures estimated by Town & Country Planning, Dibrugarh.

CHAPTER -3

3. ECONOMIC BASE AND EMPLOYMENT

3.1 Formal Sector

Sector which encompasses all jobs with normal hours and regular wages and are recognized as income sources on which taxes must be paid are known as formal sector. In local terms, organized sector or formal sector in India refers to licensed organizations, that is, those who are registered. Only 6 (six) per cent of India's working population is part of the formal sector the productivity in formal sector is high in comparison to informal sector and also offers higher wages to its employees.

Digboi is known as oil town of India Digboi Refinery, is India's oldest operating refineries in the world. The historic Digboi Refinery has been termed as the "Gangotri" of the Indian Hydrocarbon sector. Today with its vastly modernized operations and facilities, manufacturing major petroleum products and a wide range of specialty products. The marketing network has also been modernized and strengthened and today it is proud that the charging Red Rhino had made its presence felt in other states like West Bengal, Odisha, Bihar, Haryana and Rajasthan. Presently Assam Oil Division prides in having some flagship CSR projects namely IOCL (AOD) Hospital, Assam Oil School of Nursing and many other regular socially committed initiatives. Two more major units will under commission – these are the Solvent De waxing Unit (SDU) and Hydrotreater Unit (HDT). On commissioning of these two units the refinery would be in a position to produce a larger quantity of wax through the SDU and also produce environmentally friendly "green" fuels such as ultra-low Sulphur diesel. Besides enabling the refinery to produce Aviation Turbine Fuel (ATF), the hydrotreater unit will also enable the refinery to phase out the use of toxic Sulphur dioxide for refining kerosene.

In Digboi there is a vast scope for establishing crude oil related ancillary industries, as such this plan asked the Govt. for creation of a conducive atmosphere for optimum use of natural resources as well as by products of oil industry by the public sector, private sector and public-private partnership mode to build up a sound economic and industrial base in the town.

3.2 Informal Sector

The informal sector is that part of an economy which is neither taxed nor monitored by any form of government. Activities of the informal economy are not included in the GNP. Although the informal sector makes up a significant portion of the economies in poor state like Assam as well as Digboi region, the informal sector of Digboi region provides critical economic opportunities for the poor and has been expanding rapidly since the 1990s. The informal sector is largely characterized by several qualities such as Easy Entry, meaning anyone who

wishes to join the sector can find some sort of work which will result in cash earnings, a small scale of operations and skills gained outside of a formal education. Most workers in the informal sector, even those are self-employed or wage workers, do not have access to secure work, benefits, welfare protection or representation. The most prevalent types of work in the informal economy are home based workers and street-vendors which are most common in DMPA. Home based workers are more numerous while street-vendors are most visible. Combined the two field makes-up about almost 8% of the work force in DMPA.

Digboi is bounded by Dihing Forest reserve. Although the region is rich in forest resources these have not been exploited fully. There is a good scope for setting up of various wood-based cottage industries like safety matches, tea chests, furniture and pre-fabricated housing units etc.

The industrial development targets as proposed above can be achieved through private sector & Governmental agencies by providing suitable industrial land with necessary infrastructure like roads, uninterrupted power, water and drainage and subsidy on power tariff, financial assistances in the form of soft loan etc. The present concept of public –private partnership (PPP) can also be adapted for faster and smooth development of industries.

Digboi town is the nerve centre of business & service of that area. People of nearby areas use to come here to sell their produce and to buy necessary goods for their domestic consumption. There are two main markets in Digboi, one is Digboi Tiniali market and the other is Refinery market situated at the centre of Digboi town. In Digboi town there are also vegetable markets at the junction point which not only fulfil the demand for Digboi and its suburbs but also supply the essential commodities to the people of border areas of Arunachal Pradesh. These markets have played an important role in the economic expansion of Digboi town.

3.3 Occupational Pattern

Occupational structure depicts the characteristics of employment for livelihood of the people living in a particular planning area. The engagement of people in agriculture, trade, commerce, industry and white-collar jobs etc. is known as the occupation and employment character. In the year 2001, in Digboi urban area 32.2% population and in rural area 28.89% population engaged in working. The percentage of working population increased to 35.86% for urban area and 34.90% for rural area in the year 2011. In the year 2011, in Digboi master plan area 35.53% of population out of total population engaged in working. Since Digboi is known as industrial town in the map of India due to the oil refinery and it's also reflected in the occupational pattern of urban area where almost 39% of the population get their livelihood from secondary sector, i.e. from industrial base. Due to the existence of oil industry in the region, many small

types ancillary industry is growing up in the region and people engaged themselves in those industries also.

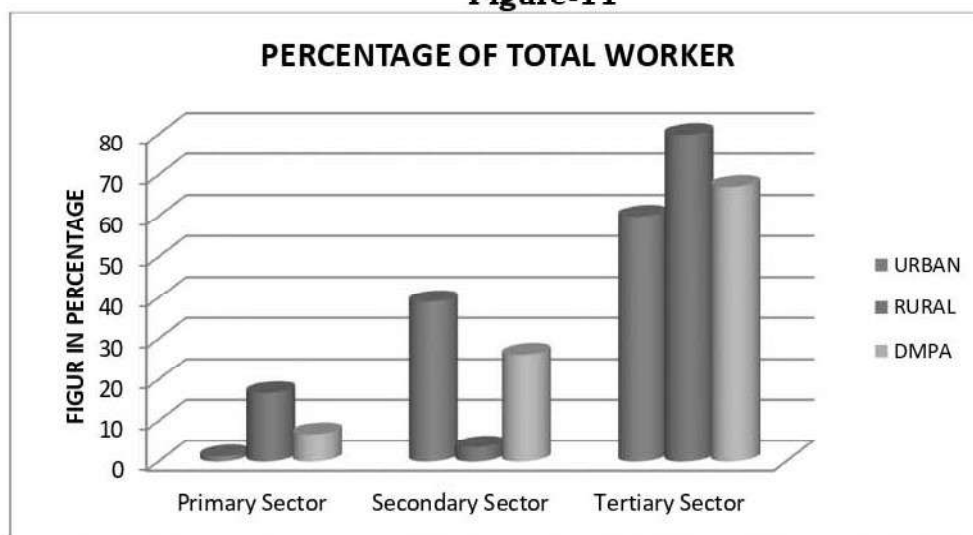
The occupational distribution of population in Digboi master plan area for the year 2011 is shown in the following table:-

TABLE NO - 12
Occupational Distribution of population in DMPA

Sl. no.	Category	Urban area		Rural area		Digboi master plan area	
		No. of workers	% of total workers	No. of workers	% of total workers	No. of workers	% of total workers
1	Primary Sector	144	1.16	1170	16.70	1314	6.79
2	Secondary Sector	4814	38.96	242	3.45	5056	26.11
3	Tertiary Sector	7400	59.88	5594	79.85	12994	67.10
	TOTAL	12358	100.00	7006	100.00	19364	100.00

Source: Census of India, Assam

Figure-11



The above table reveals that the number of people engaged in primary sector is higher in rural area as comparison to the urban area which is a normal phenomenon in India. The engagement of people in tertiary sector is also higher in rural area than in urban area due to the fact that in these so-called revenue villages adjacent to the town, urbanization trend is growing in these present days.

Only in case of secondary sector the rate of engagement of people is higher in urban area as comparison to rural due to oil township area.

Digboi is place of scenic beauty of nature with pleasant weather and British architectural town attracts tourist to visit this place and as a result tourist sector. Expansion of micro, cottage and service industry in the town and as well as in the out skirts of the town also creates employment opportunities to many people. In view of the above, the question of livelihood can be separated on the following heads as mentioned below: -

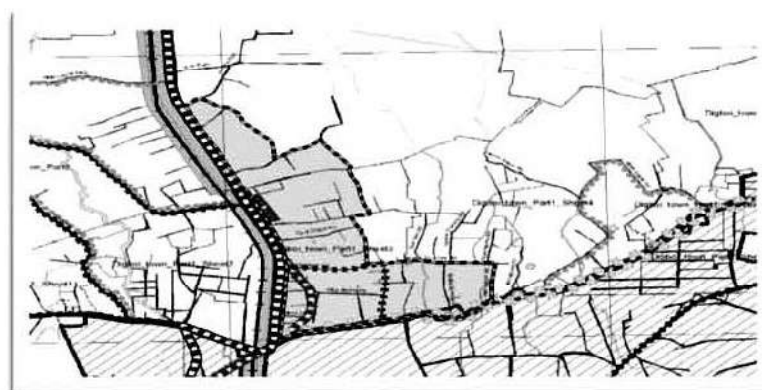
- (a) Engagement in agricultural activities.
- (b) Engagement in industrial activities including micro and household industries.
- (c) Engagement in trade and commerce.
- (d) Serving as Govt. employee & private employee.

3.4 Central Business District

A Central Business District (CBD) is the commercial and the business center of a town or city, often refer to as the “financial district”. CBDs traditionally develop in historic towns as the market square where there would be trade and other business activity this would typically be in the geographic center of the settlement. However, as town grows and became more populous, CBDs became a more fix location where retail and commerce took place. Some of the key characteristic of the CBDs include: -

- 1. High concentration of offices, banks, financial institutions and so on
- 2. High density and high-rise building
- 3. High land value
- 4. Lack of open and green space
- 5. Multistory car parking
- 6. Departmental stores
- 7. Well manage infrastructure links with other parts of the towns
- 8. High concentration of pedestrians

Accordingly, as per the characteristic of Digboi town a CDB has been earmarked in Digboi master plan as shown in proposed land use and zoning map covering an area of 0.45 sq.km.



CBD AREA OF DIGBOI

CHAPTER- 4

4. HOUSING AND SHELTER

4.1 Housing Scenario

Housing is the basic need of the civilized living. Despite various efforts to solve the housing problem with various policies, there is a huge gap between the supply and the demand for the housing in Assam in general and Digboi town in particular. A section of population in Digboi either have no place to live in or living under highly unhygienic, inhuman condition and deprivations. Lack of privacy, absence of minimum basic amenities, use of substandard building materials and unhygienic surroundings dominates the scene of settlements. In Digboi, while the housing problem in the rural areas, by and large is qualitative in nature and the problem in the urban areas is largely quantitative. The uncontrolled growth of population in urban areas due to migration and other factors have created a high magnitude of housing and infrastructure problem. Due to migration of rural population to the town, available vacant spaces in the urban areas are slowly being converted to unplanned, unhygienic built-up area. Moreover, cost of land in the urban area is also increasing. People in the low- and middle-income group even find it difficult to acquire the land at the present prevailing cost.

The housing pattern of Assam, including Digboi region have living habits of such a kind that is different from other states and region of the country. There is a general feeling in Digboi region that the basic problem is up gradation of existing units and there is very little need to be done to provide a roof for the utterly shelter less population as the category of such household is very negligible in the region.

An average household size in DMPA has 4.57. The household size being higher in Urban area (4.59 members) as compared to rural areas (4.54 members). The household size in Digboi oil town is still lower at 4.44 members as compared to Municipal Board area which is 4.68 members per household.

It is true that development of our country is dependent on the physical and mental health of the people. People who sleep on streets or who live in unhygienic houses cannot fully develop emotionally, intellectually, economically, culturally or as a family. In fact, inadequate and insecure shelter can lead to social and political instability which eventually hampers economic development of our country.

To address this problem, Government of India introduced a new Housing scheme in 2014 namely Pradhan Mantri Awas Yojana (housing for all by 2022). If this scheme does works it would at least help to reduce India's major contribution with one of the highest homeless populations in the world. Under

the PMAY, the main proposal was to construct 20 million homes for those people belonging to the Low-Income families and Economically Weaker Sections in the identified urban and semi – urban areas by 2022. Accordingly, Digboi Municipal Board is also working to provide houses to the poor as per guideline.

4.2 Housing Supply Mechanism

Housing supply is the main role of the State Government to improve living condition to the inhabitants either by directly providing houses or by financial assistance. The Government has adopted different policies to solve the housing problems especially for poor and low-income group. However, housing supply must address all social groups in the State including housing in Urban areas, semi-urban areas and rural areas. In the recent years private buildings and developer's come forward to solve the problems of housing in Urban areas of the State by constructing flat. However, such practices have not been seen in Digboi town. In the rural areas of master plan a few houses has been constructed under centrally sponsored housing scheme. The plan recommends that State Housing Board or any other Govt. agency should come forward to build housing colonies at Digboi for all sections of people of the state considering its unique scenic beauty.

4.3 Housing Condition, Type of Structure etc.

The following table's shows the number and percentage distribution of population and household in respect of different living condition such as structure of house, source of lighting source of drinking water, type of fuel used for Cooking, Banking and Specified assets, Drainage connectivity and availability of kitchen.

TABLE NO - 13
HOUSING CONDITION, TYPE OF STRUCTURE

Housing Condition	Digboi Urban Area		Digboi Rural Area		Digboi Master plan Area	
	No. of houses	Percentage	No. of houses	Percentage	No. of houses	Percentage
Permanent	4209	56.06%	1127	26.46%	5336	45.34%
Semi-Permanent	2041	27.19%	937	21.99%	2978	25.31%
Temporary	1258	16.75%	2196	51.55%	3454	29.35%
Total	7508	100.00%	4260	100.00%	11768	100.00%

Source: Census of India, 2011

Figure:-12
Housing Condition

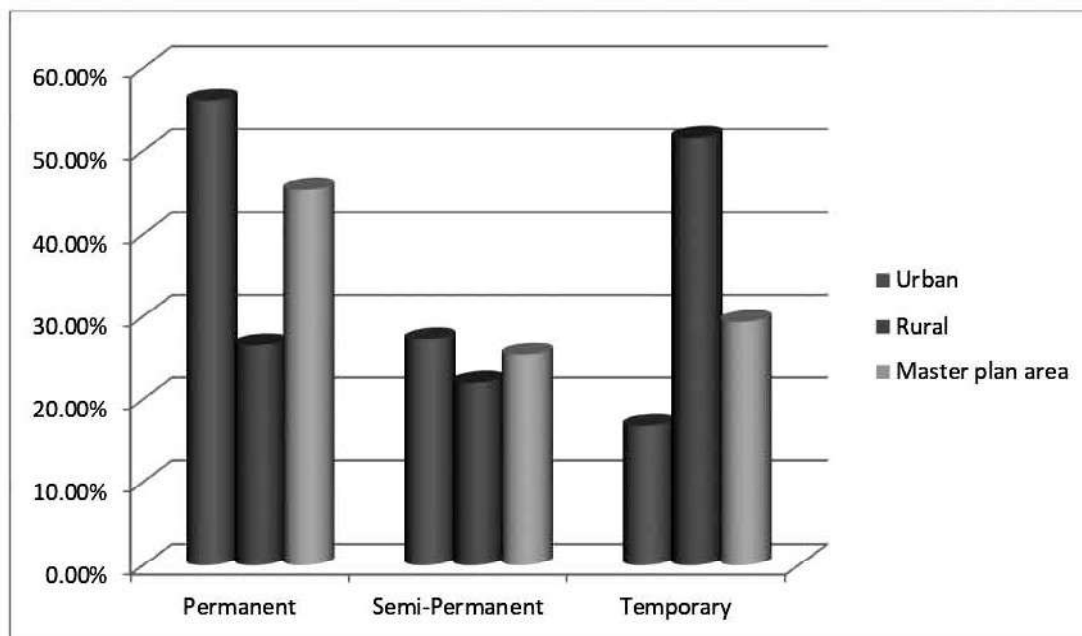


TABLE NO - 14
NUMBER AND PERCENTAGE OF HOUSEHOLD BY SOURCE OF LIGHTING

Particulars	Digboi Urban Area		Digboi Rural Area		Digboi Master plan Area	
	No. of household	Percentage	No. of household	Percentage	No. of household	Percentage
Electricity	6834	91.03	2473	58.06	9307	79.09
Kerosene	628	8.36	1747	40.99	2375	20.18
Solar	14	0.19	13	0.31	27	0.23
Other oil	8	0.11	11	0.27	19	0.16
Any other	4	0.05	3	0.07	7	0.06
No lighting	20	0.26	13	0.30	33	0.28
Total	7508	100.	4260	100	11768	100

Source: Census of India, 2011

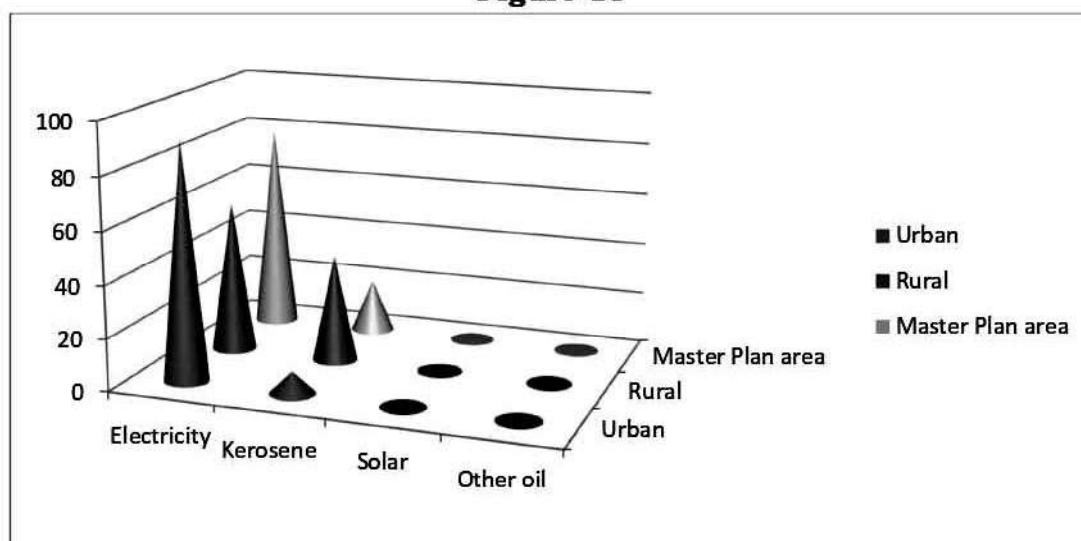
Figure-13

TABLE NO - 15
NUMBER AND PERCENTAGE OF HOUSEHOLD
BY MAIN SOURCE OF DRINKING WATER

Particulars	Digboi Urban Area		Digboi Rural Area		Digboi Master plan Area	
	No. of H/Hs	Percentage	No. of H/Hs	Percentage	No. of H/Hs	Percentage
Tap water from treated source	3145	41.89	320	7.50	3465	29.44
Tap water from untreated source	281	3.75	42	0.99	323	2.74
Covered well	49	0.65	69	1.62	118	1.00
Uncovered well	330	4.39	641	15.06	971	8.25
Hand pump	1760	23.44	2284	53.61	4044	34.36
Tube well	1751	23.32	697	16.35	2448	20.80
Spring	59	0.79	39	0.92	98	0.84
River/Cannel	17	0.23	97	2.28	114	0.97
Tanks/Pond	48	0.64	21	0.49	69	0.6
Other source	68	0.90	50	1.18	118	1.00
Total	7508	100	4260	100	11768	100

Source: Census of India, 2011

Figure:14

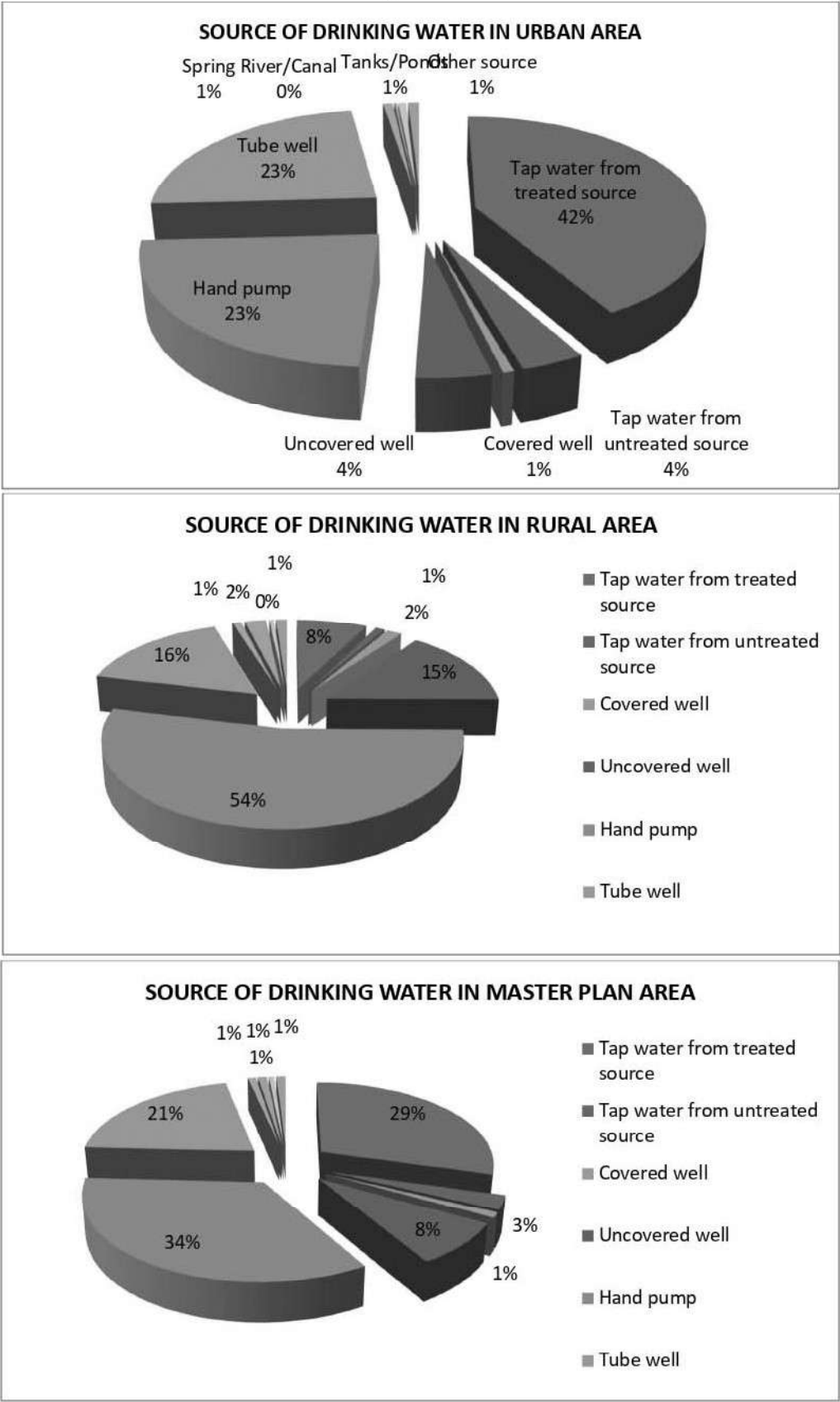


TABLE NO - 16
NUMBER AND PERCENTAGE OF HOUSEHOLD BY TYPE OF FUEL USED FOR COOKING

Particulars	Digboi Urban Area		Digboi Rural Area		Digboi Master plan Area	
	No. of household	Percentage	No. of household	Percentage	No. of household	Percentage
Firewood	1627	21.67%	3068	72.02%	4695	39.91%
Crop Residue	58	0.77%	46	1.08%	104	0.88%
Cow-dung cake	7	0.10%	6	0.14%	13	0.11%
Coal etc.	672	8.95%	64	1.51%	736	6.25%
Kerosene	215	2.87%	19	0.45%	234	1.99%
LPG/PNG	4867	64.82%	1045	24.53%	5912	50.24%
Electricity	2	0.02%	3	0.06%	5	0.04%
Biogas	14	0.19%	6	0.14%	20	0.17%
Any other	7	0.09%	3	0.07%	10	0.08%
No Cooking	39	0.52%	-	-	39	0.33%
Total	7508	100.00%	4260	100.00%	11768	100.00%

Source: Census of India, 2011

Figure-15

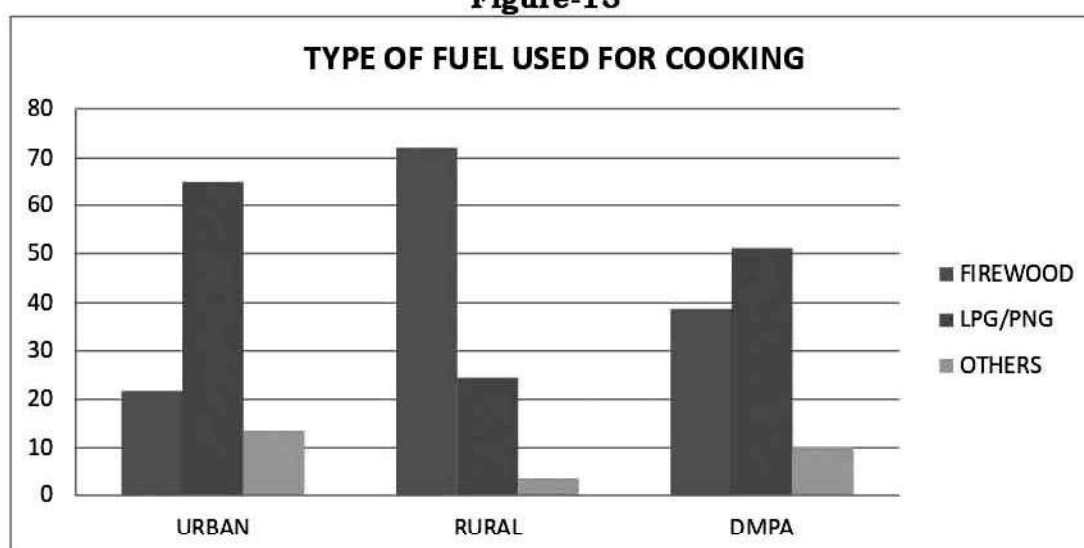


TABLE NO - 17
NUMBER AND PERCENTAGE OF HOUSEHOLD AVAILING
BANKING SERVICES AND HAVING EACH OF THE SPECIFIED ASSETS

Particulars	Urban Area		Rural Area		Master plan Area	
	No. of household	%	No. of household	%	No. of household	%
Banking Services	5894	78.5%	2425	62.56%	8319	73.07%
Radio	825	10.99%	712	18.37%	1537	13.50%
Television	5448	72.56%	2031	52.39%	7479	65.69%
Computer/ Laptop with internet	1541	20.53%	121	3.13%	1662	14.60%
Computer/ Laptop without internet	693	9.23%	177	4.57%	870	7.64%
Landline Telephone	525	7.00%	45	1.17%	570	5.01%
Mobile Telephone	6649	88.56%	2911	75.08%	9560	83.97%
Bicycle	4255	56.67%	2798	72.18%	7053	61.95%
Two wheelers	2271	30.25%	412	10.62%	2683	23.57%
Four wheelers	1150	15.32%	145	3.74%	1295	11.37%
None of the above assets	695	9.26%	785	20.26%	1480	13.01%

Source: Census of India, 2011

Figure-16

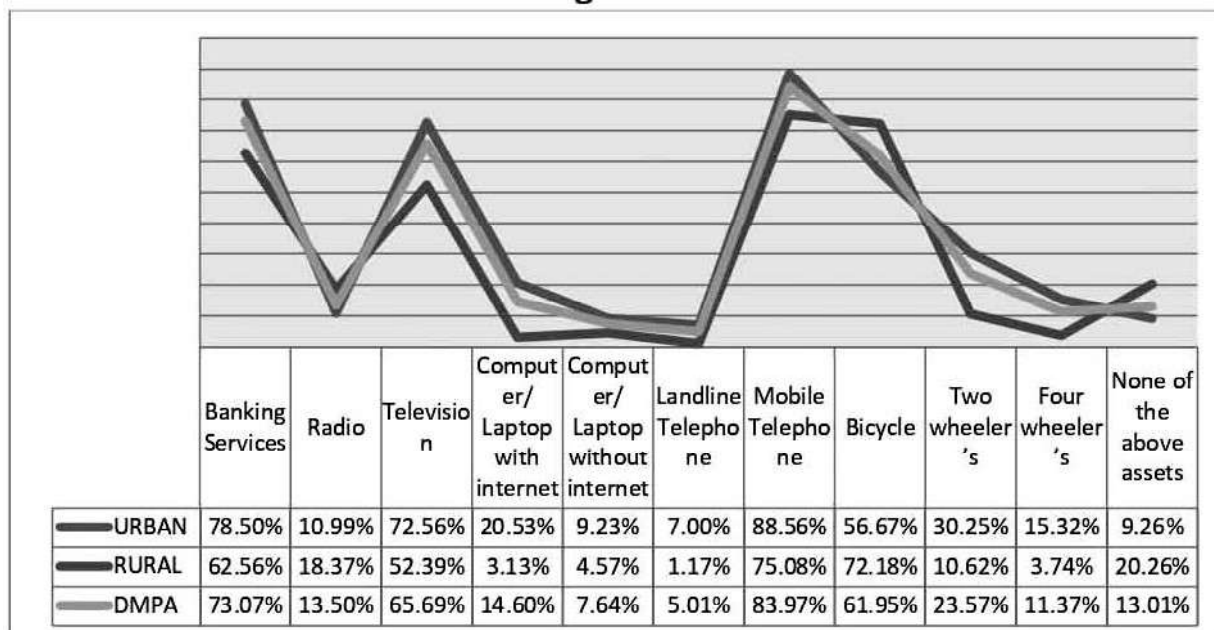


TABLE NO - 18
NUMBER AND PERCENTAGE OF HOUSEHOLD BY TYPE OF DRAINAGE
CONNECTIVITY FOR WASTE WATER OUTLET

Type of Drainage	Digboi Urban Area		Digboi Rural Area		Digboi Master plan Area	
	No. of household	%	No. of household	%	No. of household	%
Closed Drainage	740	9.86%	88	2.06%	828	7.04%
Open Drainage	4364	58.12%	1055	24.76%	5419	46.05%
No Drainage	2404	32.02%	3117	73.18%	5521	46.91%
Total	7508	100.00%	4260	100.00%	11768	100.00%

Source:- Census of India 2011

Figure-17

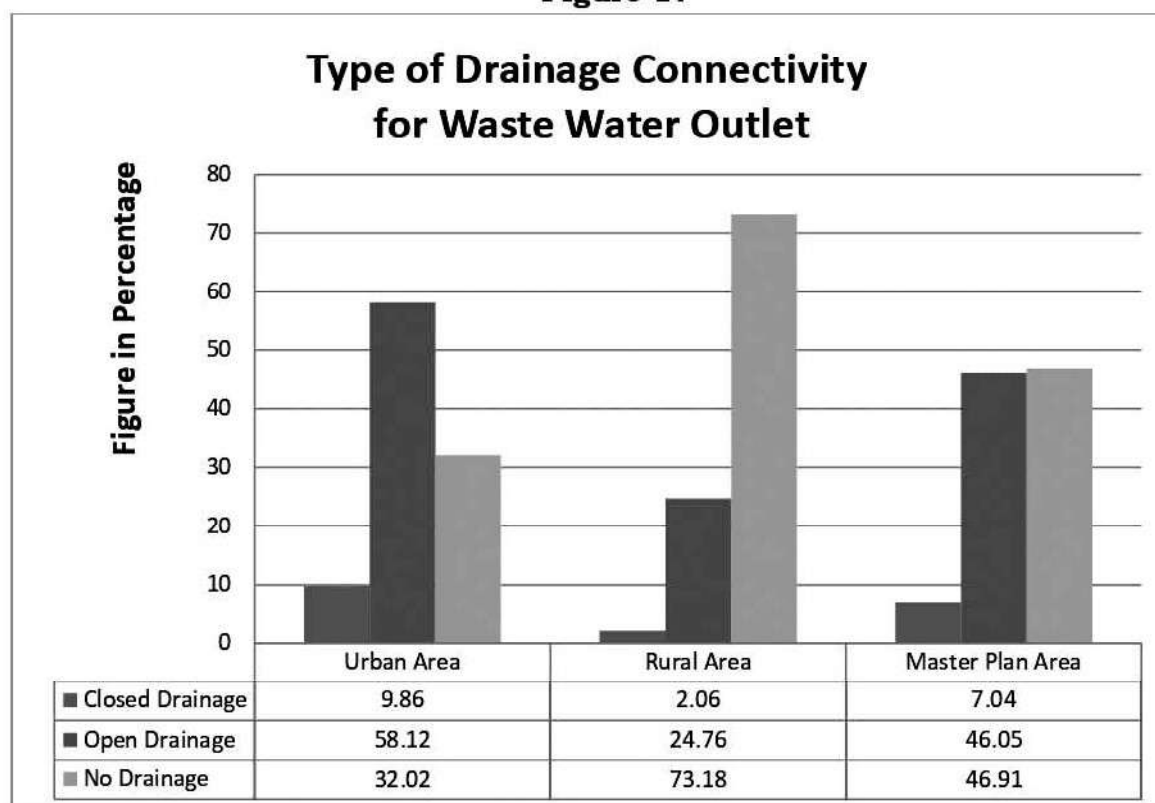
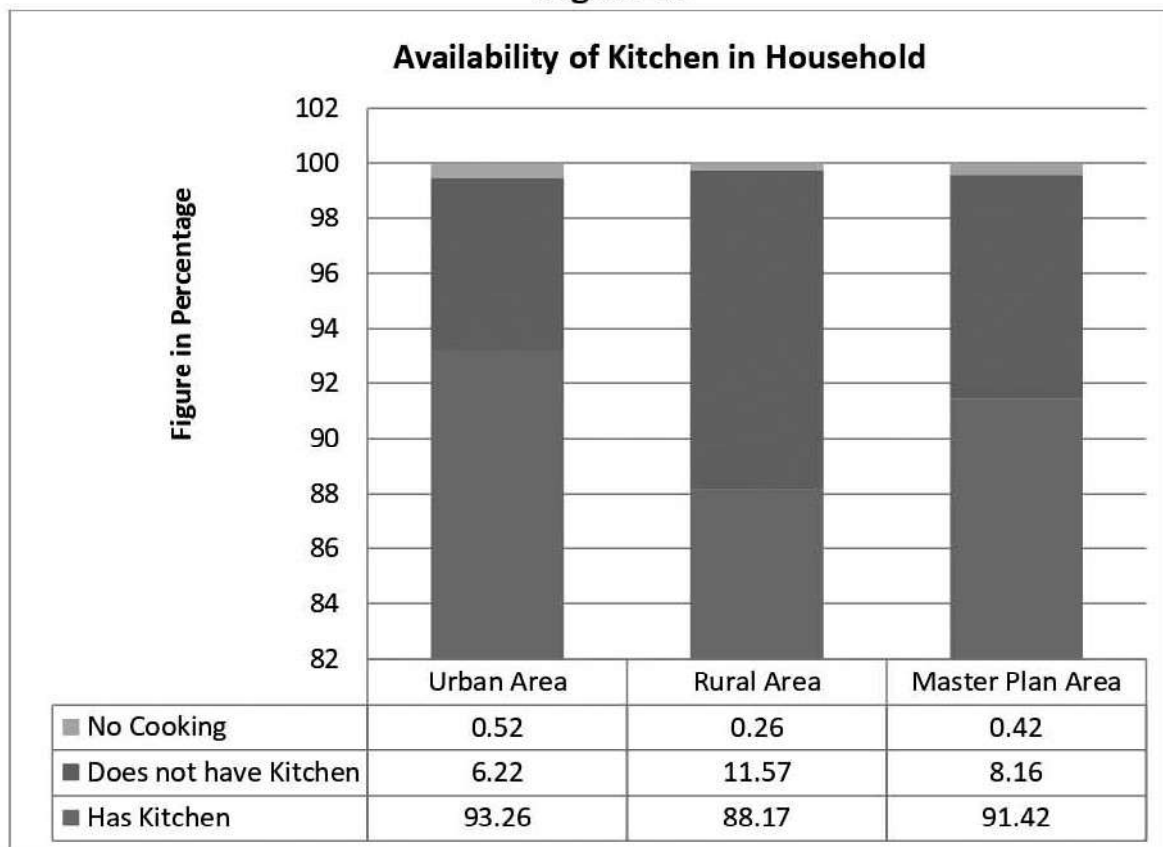


TABLE NO - 19
NUMBER AND PERCENTAGE OF HOUSEHOLD BY AVAILABILITY OF KITCHEN

Availability of Kitchen		Digboi Urban Area		Digboi Rural Area		Digboi Master plan Area	
		No. of household	Percentage	No. of household	Percentage	No. of household	Percentage
Cooking inside house	Has Kitchen	6786	90.38%	3438	80.71%	10224	86.88%
	Does not have Kitchen	417	5.56%	355	8.33%	772	6.56%
Cooking outside house	Has Kitchen	216	2.88%	318	7.46%	534	4.54%
	Does not have Kitchen	50	0.66%	138	3.24%	188	1.60%
No Cooking		39	0.52%	11	0.26%	50	0.42%
Total		7508	100.00%	4260	100.00%	11768	100.00%

Source: Census of India, 2011

Figure-18



4.4 Housing Stock, Shortage and Need Assessment

There are about 4643 nos. of houses within Digboi Municipal Board area and 2865 nos. of houses in Digboi oil town and as a whole there are 7508 nos. of houses in Digboi urban area in the year 2011. The numbers of houses in rural area of Digboi master plan are 4260 nos. According to 2011 census, in Digboi master plan area the total numbers of houses are 11768 nos. Since there are 53809 persons in DMPA in the year 2011 and the above housing figure shows that an average of 4.57 persons per house.

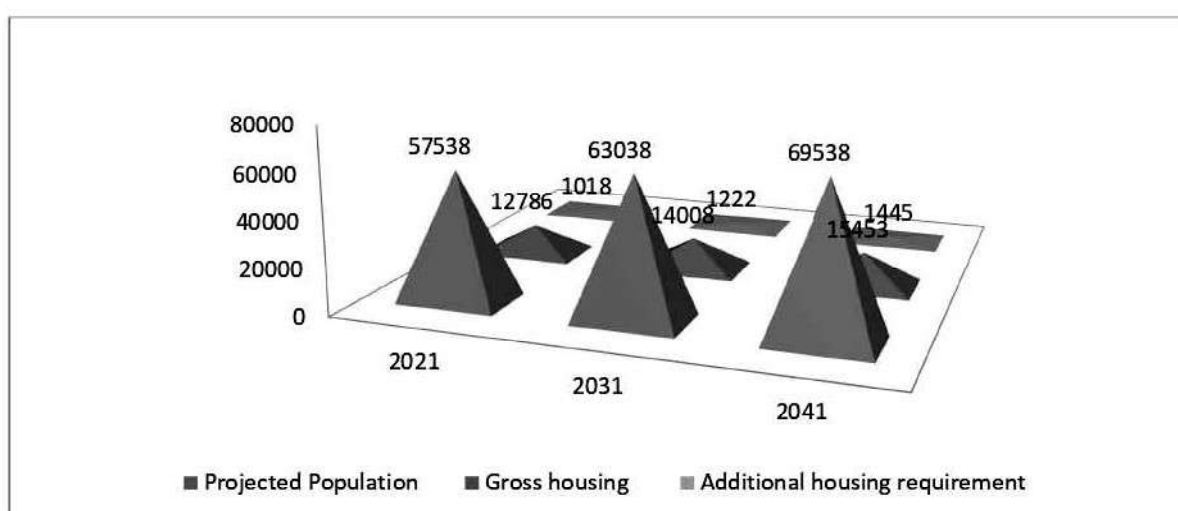
To find out the housing requirement for future, a detailed study of family size level of obsolescence, existing shortage etc. are necessary. However, on the basis of projected population and household size of 4.5 persons the gross housing need is assessed below:

TABLE NO - 20
Additional Housing Requirement In DMPA
for residential purpose upto 2041

Year	Projected Population	Additional housing requirement	Gross housing
2011	53809 (existing)	-	11768 (existing)
2021	57538	1018	12786
2031	63038	1222	14008
2041	69538	1445	15453
	Total	3685	-

Source: T&CP, Dibrugarh

Figure-19



It is estimated that the gross housing requirement for residential purposes up to 2041 in the master plan area are 15453 nos. houses for a projected population of 69538 persons. Since the number of existing houses for residential purpose are 11768 nos. in the year 2011, so additional housing requirement for the increasing population will be 3685 nos. of houses in the year 2041. The plan therefore has paid attention to the magnitude of housing problem and recommended that necessary housing schemes by various agencies with the help of Govt. should be undertaken with the frame work of the master plan.

CHAPTER-5

5. TRANSPORTATION

5.1 Network of Roads

Urban road network is considered as engines of economic growth. The road within oil town is sufficient width and well equipped. However, the roads in Digboi Municipal Board area are very narrow and shoulder width is insufficient to accommodate the present traffic volume for easy movement except N.H.-38 and there is also little scope for the widening. There are two level crossings within the master plan Area, one is at Digboi tiniali which remain always busy and requires immediate improvement. The 2nd one is situated at AOD-Muliabari road. Moreover, road junctions in the town are not technically developed and it requires immediate technical intervention.



The roads within the residential areas in Digboi Municipal Board area are too narrow. Widening of these roads is urgently necessary. There is hardly any parking area within the town.

For smooth traffic movement in Digboi master plan area the plan provides 202.68 hectare of land, which constitute 6.95 % of the master plan area for circulation purposes. In this plan, emphasis has been given on the following aspects for effective transportation system in Digboi master plan area.



- (i) Optimum use of the existing transportation system through improved traffic operation and controls.
- (ii) Improvement of the existing road network through strengthening and widening.
- (iii) Provision for adequate parking facilities.
- (iv) Development of new roads and other transport facilities.

5.2 OVERVIEW OF CRITICAL ROADS AND IMPROVEMENT

Digboi well connected with the rest of the country by roads. The National Highway have connected Digboi with other places as shown below: -

- a) Digboi to Margherita
- b) Digboi to Tinsukia
- c) Digboi to Dibrugarh via Tinsukia
- d) Digboi to Jagun via Ledo
- e) Digboi to Changlang of Arunachal Pradesh
- f) Digboi to Miao of Arunachal Pradesh
- g) Digboi to Deomali of Arunachal Pradesh.



Digboi is also connected with railway network from Ledo to Guwahati. The railway station of Digboi facilitates the passengers to travel to Guwahati via Tinsukia and also outside Assam. Beside train plying of taxis, buses, winger and trucks are playing a major role in transporting passengers and goods to and from Margherita.

Digboi town has gained importance in the field of industry and business owing to its industrial base and existence of nearby industrial and business towns like Ledo, Margherita, Makum and Tinsukia. This has resulted in to increase of vehicles on the roads of Digboi town. On the other hand, a good number of ASTC buses, private buses and winger ply through the town. The buses and small vehicles plying through Margherita town follow the following routes:

The buses and small vehicles plying through Digboi town follow the following routes:

- a) Miao of Arunachal Pradesh to Tinsukia, Dibrugarh via Digboi.
- b) Jagun to Dibrugarh, Jorhat via Digboi.
- c) Deomali of Arunachal Pradesh to Dibrugarh via Digboi.
- d) Ledo to Tinsukia, Dibrugarh via Digboi.
- e) Digboi to Guwahati via Tinsukia (both day & night service)

A well laid transportation network solves majority of the urban issues and increases the efficiency of the town.

Recommendation of the road network is made as per the **IRC guidelines** and in accordance with the provisions of “**THE ASSAM PUBLIC WORKS (REGULATION OF ROAD DEVELOPMENT AND ROAD TRANSPORT) ACT- 2010**” with recommendation that all new road proposal should have utility duct.

The plan recommends development of road infrastructure as per table given below:

TABLE NO:-21
CATEGORY OF ROADS

Category of roads	Name	Critical Road (C)	Existing Width (M)	Recommended width (M)
Major	Makum - Digboi – Margherita road NH.38	(C)	18	25
	Digboi-Duliajan road		12	18
	Digboi-Pengeri road	(C)	11	15
Arterial	IOCL road		9	12
	Kalibari road		3 - 4	6.6
	Vivekananda Vidyalaya Road		4	8.5
	R.G. Road		4	8.5
	P.N.G.B. Road		6	8.5
	Durgabari Road		4	8.5
Sub-Arterial	Mission Para road		9	12
	Tipam road		9	12
	Muliabari road		9	12
	Josoda Road		9	12
	Tipam T.E. Road		4 – 5	8.5
	Telenga Sadhu Mandir Road		4 – 5	8.5
	Refinery Settlement area Road		4 – 5	8.5
	Chukafa Nagar Road		4 – 5	8.5
	Santan Sangha Road		3 - 4	6.6
	Sarada Sangha Road		4	8.5
	Coal Depot Road		4 – 5	8.5
	Shiv Bari Road		4 – 5	8.5
	Master Para Road		4 – 5	8.5
	Lachit Nagar Road		4 – 5	8.5
	Milan Nagar		4 – 5	8.5
	Tupula Basti Road		4 – 5	8.5
	Muliabari Janata Vidyalaya Road		5	8.5
	Bapapung Tamuli Road		4	8.5
	Bapapung Sarbajanin Namghar Road		5	8.5
	Bapapung Panbari road		6	8.5
Other Road	All other roads not mention above			Min 8 & 4.5 for Single Plot

Source:- Prop. By T&CP, Dibrugarh

5.3 Bus Transport Terminals

At present both ASTC and private bus stations are located along the road side of N.H-315 at Digboi town.

At present Taxi, Auto and Bus stand near ASTC Bus Stand at NH 315 NH-115. This stand is also creating congestion and obstruction to the smooth flow of traffic during peak hours.



In Digboi town the surface condition of the road is much better than other towns and the access roads widen in DMPA. Most of the traffic generated from Ramnagar tiniali to Digboi Pengri tiniali, Pengri Road, Digboi CISF Camp to Namdang House. But the entire area does not have organized parking space.

Keeping in view the above, the plan recommends for new Bus terminus and renovation of the existing Bus cum Auto stand in the North part of master plan area.

5.4 Freight Zones Logistics

Presently there is no truck terminus at Digboi. The loading and unloading from trucks are carried out by the side of road at NH. 315 & 215 in DMPA. Therefore, the plan proposes freight zone and logistic site at No.1 Borbil Gaon Part-I in line of **Pradhan Mantri Gati Shakti movement**

5.5 Footpaths and Bicycle Tracks

Footpaths are normally designed for pedestrian for pleasant and comfortable walking. In Digboi there some roads having footpath in the town. There is no cycle track in the town.

Exclusive lane for slow moving vehicles, pedestrians along with spaces for street vendors are also essential for overall development of a town. The hawkers and street vendors also play an important role in urban economy. The notification of vending and no vending zone by the authority is mandatory as per the provisions of the Street Vendors Act, 2014. This improves the capacity of the lanes designed for motorized vehicles and increases the safety of slow-moving vehicles and pedestrians

The plan suggests construction of footpath in both sides of all the roads in the town by the concerned authority. The plan also earmarks cycle track in the Digboi Pengeri Road (near War Cemetery) and road inside Digboi refinery town.



The width of footpath as per URDPFI guidelines is follows:

TABLENO: -22
WIDTH OF FOOTPATH

Sl. no	Description	Width(mtr)
1	Minimum free walkway width in residential/mixed use areas	1.8
2	Commercial/Mixed Use Areas	2.5

The **URDPFI Guideline** for cycle /NMT track is given in the following table:

TABLENO: - 23
CYCLE TRACK

Sl. No.	Arterial Roads	SUB Arterial Roads	Distributary Road	Access Roads
Non-Motorized Vehicle	Segregated cycle track	Segregated cycle track	Cycle lane	Mixed/traffic
Location	Between carriageway or street parking and footpath on either edge of the carriageway	Between carriageway or street parking and footpath on either edge of the carriageway	On the edge of the carriage, adjacent to the footpath or parking	Not applicable
Gradient	1:12-1:20	1:12-1:20	1:12-1:20	1:12-1:20
Lane width	2.2 to 5.0m	2.2 to 5.0m	2.2 to 5.0m	Mixed with motorized vehicular traffic
Minimum width	2.5 for a two-lane cycle track and 1.9m for a common cycle track and footpath	2.0 for a two-lane cycle track and 1.7m for a common cycle track and footpath	1.5m	1m(painted)

5.6 Parking

At present, there is no organized parking space for the cars, two wheelers in the market area. The cars are generally parked on the main road of the town. The roads are already overcrowded with traffic and further encroachment on road surface by cars and two wheelers has resulted obstructed traffic congestion.

The recommended equivalent car space (ECS) required for different type of vehicles as per **URDPFI** guidelines are given in the following table for design of parking areas.

TABLE NO:-24
PARKING SPACE

Sl. no	Vehicle type	ECS
1	Car /taxi	1.00
2	Two Wheeler	0.25
3	Auto Rickshaw	0.50
4	Bicycle	0.10
5	Trucks/Buses	2.5
6	Emergency Vehicles	2.5
7	Rickshaw	0.8

5.7 Areas with Major Traffic Congestion and Parking Issue, Accident Prone Area

The maximum inter -town traffic volume is generated on the road starting from Ramnagar tiniali to Digboi Pengri tiniali, Pengri Road. This is the most vital link for both to the town and the rest of the district. The two inter town traffic generating road is Digboi Pengri road and Digboi CISF Camp to Namdang House.

The presence mixed traffic has accelerated traffic congestion in Digboi. The town has mainly two accident prone areas, namely the area adjacent between Ramnagar tiniali to Digboi Pengri tiniali (NH- 315 & 215) and Digboi CISF Camp to Namdang House (NH- 315 & 215) signage and marking in the road in these areas is the need of the hour.

The heavy vehicles belonging to oil, coal and tea industry ply daily through the town is also a cause of concern for public safety.

5.8 Improvement of Rotary and Junctions

The town does not have a road rotary and plan does not foresee its requirement. However, improvement of all road junctions as per IRC guidelines is urgent and important for improving the traffic scenario.

5.9 Street Lighting and Proposed Improvement Plan

The town is illuminated by Digboi municipality with 20 nos. High mast light, 540 nos. of street light for the convenience of the people.



5.10 Fixation of road level & plinth level for Digboi master plan area with Signage: Availability & Requirement

➤ Fixation of road level

As per city planning norms, road levels must always be lower than that the adjoining properties they serve. Since plinth levels of once constructed building don't change (unless they are demolished under reconstruction), it should be obligatory on the part of appropriate authority to ensure that road/lane levels are not raised unnecessarily as and when they are resurfaced in subsequent years. Since this aspect is not being judiciously taken into account usually by the executing agencies during road repairs many old buildings in our cities & towns which were constructed 20-30 years ago are now at the same and in few cases even below adjoining road levels which have been raised arbitrarily without evaluating their resultant impact on these adjoining areas serve by this road network.

In most well governed cities of the world, road level once fixed at the time of their initial construction remain usually same and are not tempered with later on.

Accordingly, the plan suggests the concern authority to use contour map and present HFL – 148.58 (M) for fixation of road level in master plan area. The plan proposes for fixation of plinth level as mentioned below :-

➤ Fixation of plinth level should be done based on the following :-

Works department like PWD (R), NH etc. shall erect permanent posts at suitable location / land mark points and at road intersection point depicting the RL of road and HFL of that area carried out from nearest Railway platform or from other specific location where bench mark from Mean Sea Level -MSL (is) recorded so that the same can be taken as bench mark for fixation of plinth level of buildings of near by areas.

The maximum allowable height of plinth is RL of adjoining road + 0.75 mtr.

However, roads where HFL is above road level, the road level for fixation of plinth height shall be considered as HFL and in cases where road level is above HFL, the existing road level shall be considered as final road level of fixation of plinth height.



➤ **Signage : Availability & requirement**

The ULB, traffic and other concerned departments will assess the requirement of signage and accordingly install the signage as per the rules and regulations for the beautification of the town as well as smooth flow of traffic and public convenience.

5.11 Major Proposals

- I. One truck stand at No.1 Borbil gaon.
- II. One Freight Zone & Logistic center proposed at No.1 Borbil gaon.
- III. The authority concern may develop existing bus stand with all facilities required for commuters.
- IV. Considering the scenic beauty of the town, the plan recommends plantation along the major roads and development of traffic points to augment the aesthetic beauty of the town.
- V. Widening and improvement of roads, with street furniture and demarcation of notified parking area.
- VI. Proposal for ROB at NH- 38 (Old) 315 (New)

CHAPTER 6**6 INFRASTRUCTURE, PUBLIC UTILITY & SERVICES****6.1 Physical Infrastructure****6.1.1 Water Supply**

Digboi do not have a water supply scheme and presently AUWS&SB is preparing a scheme for the town. Piped water supply system is only available within Digboi oil town and to its just adjacent areas and for the other areas of the town as well as in rural areas there is no pipe water supply system. The AOD Limited is presently supplying potable water only to its township. For the rest of the town and rural areas, the only source of water is tube well and the ring wells as ground water and surface water is readily available at Digboi and its adjoining areas. Though the tube well and ring well are efficiently functioning, it will no longer be considered as free from contamination due to presence of a number of pit latrines. A comprehensive water supply scheme with treatment plant covering the population up to 2041 is the need of the hour.

The objective of a public protected water supply system is to supply safe and clean water in adequate quantity, conveniently and as economically as possible. Rising demand of water due to rapid urbanization is putting enormous stress while planning the water supply system for an area; it is evident to consider water conservation aspects, which may be possible through optimal use of available water resources, prevention and control of water and effective demand management

6.1.2 URDPFI Guideline's for Water Requirement

As per URDPFI guidelines the norms for water requirement for institutional buildings are given below: -

TABLE NO-25
REQUIREMENT FOR INSTITUTIONAL BUILDINGS

Sl.No	Institutions	Litters per head per day
1.	Hospitals (including laundry)	--
a)	No. of beds exceeding 100	450 (per bed)
b)	No. of beds not exceeding 1000	350 (per bed)
2.	Hotels	180 (per bed)
3.	Hostels	135
4	Boarding Schools	135
5	Restaurants	70 (per seat)

6	Day school / colleges	45
7	Offices	45
8	Cinema, concert halls and theatre	45

In addition to the above the fire- fighting water demand is also as a function of population. It is desirable that one-third of firefighting requirements from part of the service storage. The balance requirement may be distributed to several state tanks of strategic points. These strategic points may be filled from nearby pond streams or cannels by water tankers wherever feasible.

The plan also recommends preparation of a comprehensive potable water supply scheme as per guideline of CPHEEO manual of Govt. of India to cater the needs of the estimated population of 53686 up to 2041 by a competent authority.

6.1.3 Drainage system

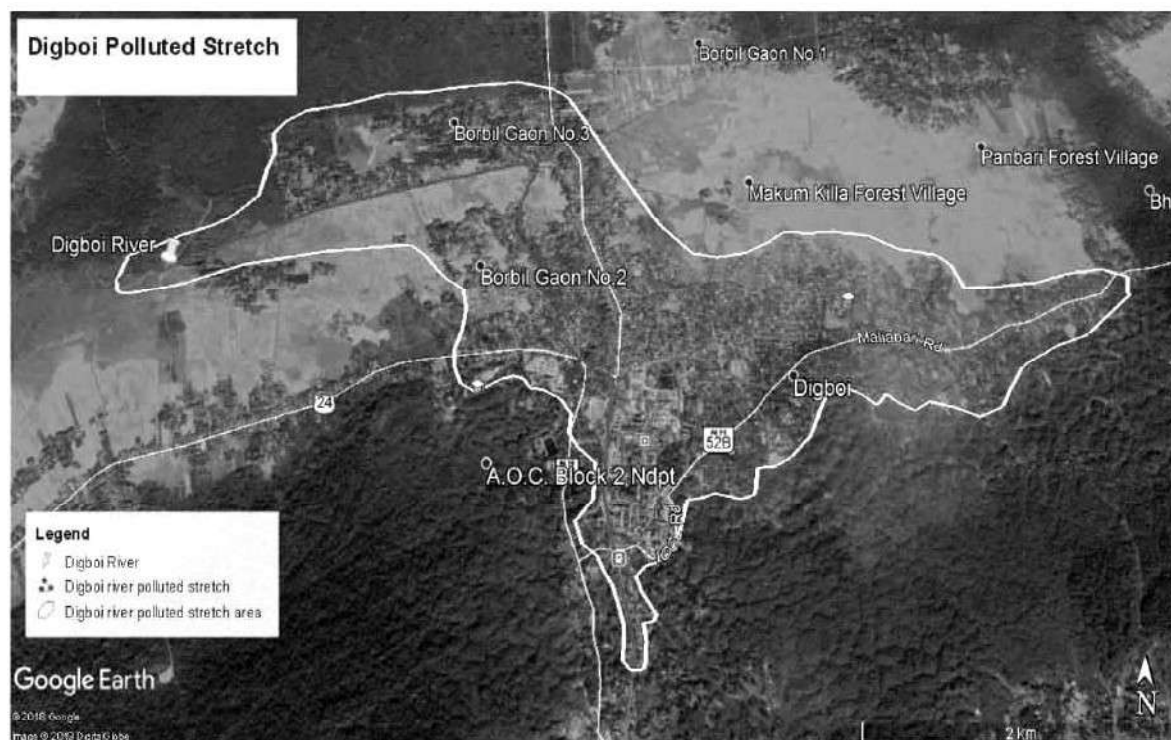
The drains mainly carry industrial as well as residential wastes. Direct dumping of residential and commercial garbage into the channel is making it shallower and heavily silted as the drains of the town are also becoming a regular garbage-dumping site. Moreover, these drains are not planned properly to carry even the regular water.

Some natural drainages of local origin are acting as the drainage system to evacuate sewage originating from domestic households, commercial establishments, institutes, industries etc. There is no drainage master plan at present.

The Digboi River is a small river which is a sub-tributary of the Burhidihing River and crisscrosses the Dihing Reserve Forest (West Block). The river has its origin at upper Dihing Reserve Forest near Golf Course and flows towards the Tipling river. The river after flowing through the Tipling river, finally turns towards Buridihing and then confluence with the river. It has its entrance point to the Digboi town at Ram Nagar Bridge, Digboi. The catchment of the river extends to a number of villages, Lakhipathar Reserve Forest, Oil collecting stations and paddy fields. The river flows for about 32 km from here to its confluence point, Bamuni Gaon, Ushapur and falls in the river Burhidihing, which is the largest tributary of the Brahmaputra. It is a perennial river and carries water throughout the year. The bank of the river Digboi is composed of alluvial soil. The alluvial deposits are characterized by its coarse nature, reddish colour and sandy clay.

(A) Polluted river stretch/length: -

The length of the polluted stretch of Digboi River is 7.6 km with an area of 11.7 sq.km. shown in figure below. The stretch identified as polluted is from IOCL Oil town to Lakhpathar Reserve Forest.



Digboi town and Digboi oil town are the major localities situated on the bank of the Digboi river. The localities being Netaji Nagar, Ananda Para, Mission Para, Jyoti Nagar etc. Moreover, two (02) numbers of villages namely Borbil No.2 and Borbil No.3 are also situated along the polluted river stretch. These villages are medium sized and settled in scattered plan.

Industrial Pollution Control Classified industrial units in the form of Health care Units, Hotels, Tea estates etc. are observed with infrastructural facilities (ETPs, STPs) in the periphery of the polluted river stretch of Digboi river along with few small-scale industrial establishments

The river receives storm water along with municipal sewage by two drains coming from Digboi Township at Borbil no.3 at a distance of 1 km from Ram Nagar Bridge, Digboi. However, few drains of natural origin also exist that aid in evacuating the city sewage originating from households, commercial establishments, institutes, industries etc.

The plan proposes 2 Nos of Effluent Treatment plant under Digboi Master Plan as shown the location in Utility Plan **Northern part of master plan at No. 3 Borbill Gaon Pt. 2** and **Southern part of master plan at No. 1 Golai Gaon.**

6.1.4 Sanitation

In Digboi urban area almost 61% household use septic tank and 16% household use pipe sewer system. In rural areas of Master plan the use of septic tank by the household is 26.71% which is much lower as compared to the urban areas. In the master plan area as a whole the percentage of households use septic tank are 48.61%. In the Master plan Area, almost 15.65% household use pit which are not conducive for health and environment. This type of condition is prevailed in all over India. As such, The Government of India in the year 2014 introduced the Swachh Bharat Mission (SBM) which is being implemented by the Ministry of Urban development and Ministry of Drinking and sanitation for urban and rural areas respectively. The main objective of the mission is – Elimination of open defecation, Eradication of manual scavenging, Modern and scientific Municipal Solid Waste Management, to effect behavioural changed regarding healthy sanitation practices, generate awareness about sanitation and its linkage with public health, capacity Augmentation for ULB's.

Swachh Bharat Mission (SBM) will improve the health conditions of every Indians. This practice will be able to prevent many types of diseases in the country and we will be able to have a happy and healthy society. SBM can be able to build a better eco-friendly environment in the country and can give better life to our upcoming generations. SBM will also help in generating employment through tourism and boos India's Gross Domestic Product (GDP).

Unhygienic condition's is one of the major root courses of diseases/illness. Any disease or illness has financial impact both in terms of expenditure and potential revenue earning. As such, SBM will have positive impact on India's health care sector. SBM will plug the loss due to unhygienic and lacks of cleanliness and will help to case burden on existing health care facilities. SBM will lead to Hcalth India which in turn increcascs productivity of Indians. High productivity means high earning potential. Under current economic conditions, India desperately need Foreign Direct Investment (FDI) for this the country must be clean.

SBM will benefit socially and financially each & every citizen of India. If we want financial growth then we have to collectively make SBM a roaring success in future. SBM is one of the critical links towards economic success of India. Under SBM it is estimated that about 20% of the urban household in towns, who are currently practicing open defecation are likely to use community toilets as a solution due to land and space constraints in constructing individual household latrines. For this component beneficiaries shall be groups of households in urban area whose members practice open defecation and who do not have access of two household toilets and for whom the construction of individual household toilet is not feasible.

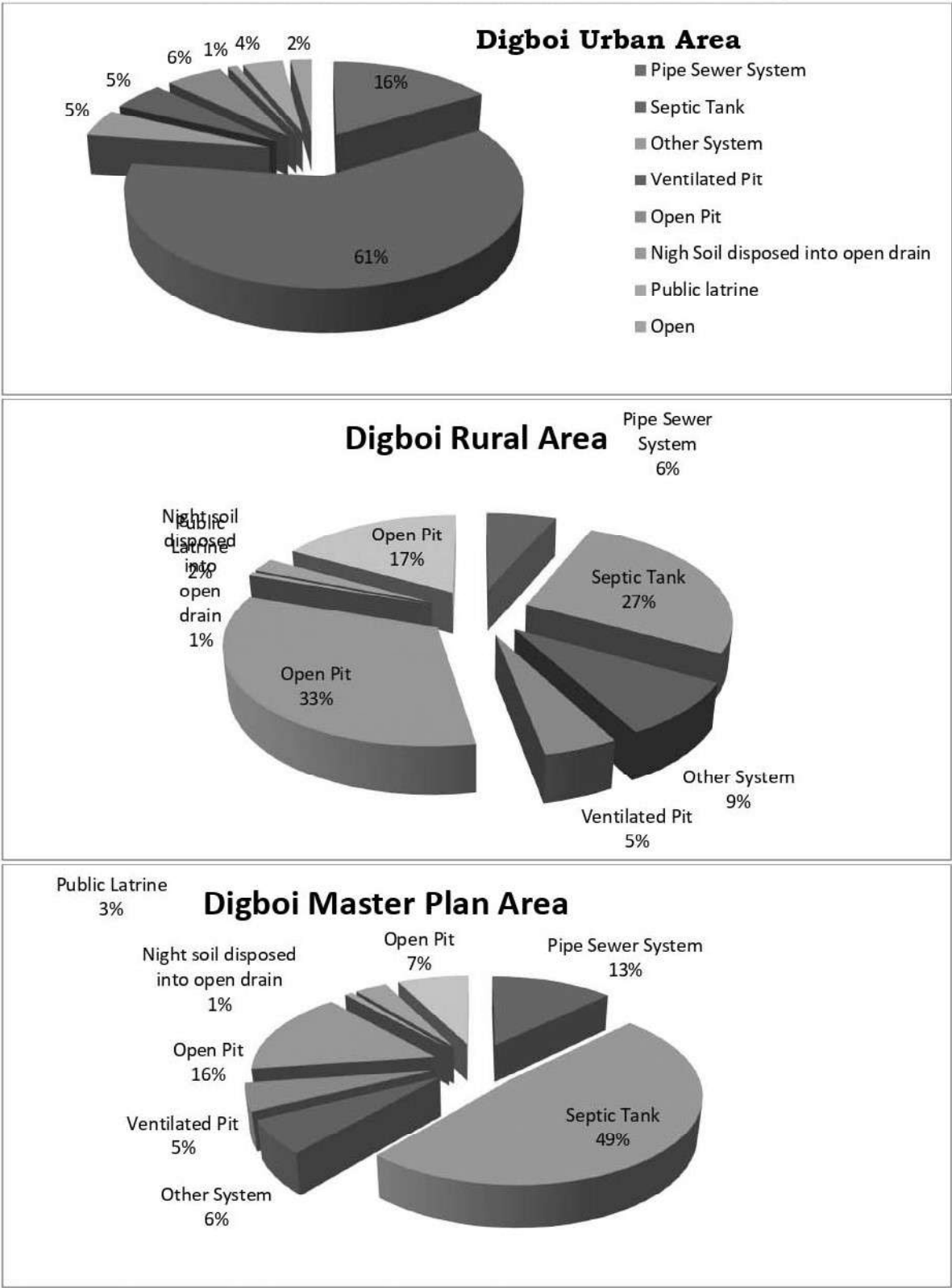
Under SBM, ULB's will ensure that a sufficient number of public toilets to be constructed in the town. All prominent places within the town attracting floating population should be covered. Cares should be taken to ensure that these facilities have adequate provision for man, woman and facilities for the disabled (e.g., ramp provision, Braille signage etc.) wherever necessary.

TABLE NO:- 26
Number and Percentage of house hold by type of latrine facility.

TYPE OF LATRINE FACILITY	Digboi Urban Area		Digboi Rural Area		Digboi Master plan Area	
	No of Household	Percentage (%)	No of household	Percentage (%)	No of household	Percentage (%)
Pipe Sewer System	1222	16.28%	277	6.51%	1499	12.74%
Septic Tank	4582	61.08%	1138	26.71%	5720	48.61%
Other System	361	4.81%	385	9.03%	746	6.34%
Ventilated pit	389	5.18%	205	4.81%	594	5.05%
Open pit	425	5.66%	1417	33.27%	1842	15.65%
Night Soil disposed into open Drain	71	0.94%	26	0.60%	97	0.82%
Public Latrine	298	3.97%	96	2.25%	394	3.35%
Open	160	2.13%	716	16.82%	876	7.44%
TOTAL	7508	100%	4260	100%	11768	100%

Source:- Census of India, 2011

FIGURE-20
HOUSEHOLD BY TYPE OF LATRINE FACILITY



6.1.5 URDPFI Guidelines for Public Toilets

The general standard for public toilets in public area and modified norms for public toilets in public places and roads recommended **in URDPFI guideline** are given below: -

TABLE NO:- 27
NORMS FOR PUBLIC TOILETS IN PUBLIC AREA.

TYPE	NORMS FOR TOILETS
Public toilets	On road and for open areas every 1 Km. including parks, open air theater, car parks and fuel station. Toilets shall be disabled friendly and in 50: 50 ratios (M / F)
Signage	Signboards on main streets shall give directions and mention the distance to reach the nearest public convenience of visitors. Helpline number shall be pasted on all toilets for complaints / queries
Modes	Pay and use or free in pay and use toilets entry is allowed on payment to the attendant.
Maintenance / Cleaning	The toilets have both men and women attendants. Alternatively automatic cleaning cycle covering flush, toilet bowl, seat, hand wash basin, disinfecting of floor and complete drying after each use can be adopted. Public toilets shall be open 24 hrs.

The urban local body can follow the above norms for construction the public toilet and maintenance thereafter.

6.1.6 Sewerage Network

Like the rest of the towns of the state, Digboi also does not have sewerage network and treatment plant in Municipal and Rural area. Human night soil is generally disposed at conventional septic tanks or low-cost sanitary pits. Till the execution of the sewerage scheme, it is recommended to encourage the people to construct sanitary latrines of their own and to cover poor families under Swachh Bharat Mission. The sewage generation in Digboi town is shown below: -

S.N	Area	Wards	Population as per 2011 census	Water Consumption (KLD) @135lpcd	Sewage Generation (KLD)	No. of STPs Proposed	Existing Treatment capacity (KLD)	Total Gaps in KLD
1	Digboi Town Committee	01	1,731	233.7	186.4	01	Nil	4714.8
		02	2,993	404.1	323.3			
		03	3,818	515.4	412.3			
		04	3,235	436.7	349.4			
		05	4,385	877.0	701.6			
		06	2,485	335.5	268.4			
		07	1,750	236.3	189.1			
		08	1,339	180.8	144.6			
2	Digboi Oil town	1	12726	1718.0	1374.4			
3	Borbil No. 2	-	3903	527.7	422.2			
4	Borbil No. 3	-	3177	428.9	343.1			
Total			41542	5894.1	4714.8			

Source:-Environment & Forest Department Government of Assam

During the survey effluent treatment plant by Digboi refinery has been seen in their jurisdiction for treatment of effluent water from their refinery.



6.1.7 Solid Waste Management

There is no planned solid waste management system or even a landfill site for scientific disposal of the solid waste at Digboi. Since the town is expanding in recent years, so the situation only stands to worsen unless concerned authorities give a serious thought to the problem. At present AOD refinery maintains the market area and collects 4 to 5 MT of solid waste daily and DMB is collecting approximately 3 MT of solid waste with hand craft from the rest of the town and dump at Golai No.5 covering an area of approx. 10 Bigha. In master plan area as a whole total solid waste generate 15.60 TPD @ 290 m per person and upto 2041 the total solid waste will be generate in the master plan area 20.16 TPD for the projected population of 69530 and 15453 household respectively. This plan suggests to develop the site scientifically for Solid Waste Management System for the DMPA.

The Town generates a good amount of biodegradable solid waste besides plastic waste and malted wastes. So, this plan has suggested a few steps for scientific solid waste management system in Master plan Area. This includes segregation of bio-degradable and non-biodegradable solid waste at source, construction of compact pits at all residential houses in order to produce compost wherever feasible, introduction of specific litter bins for collection of segregated bio-biodegradable and non-biodegradable solid waste for soil conditioning and recycling purpose respectively, and doing away with the system of dust bins along roads which is a major cause of pollution.

Manpower and Machineries available for SWM related works in Digboi MB:

a) Manpower	-	40 Nos.
b) Organic Waste Converter	-	1 No.
c) Trommel machine	-	1 No.
d) Bailing machine	-	1 No.
e) Multipurpose shedder machine	-	1 No.
f) General shedder machine	-	1 No.
g) JCB	-	1 No.
h) Hydraulic Tripper	-	2 No.
i) Tata Ace hydraulic	-	8 No.
j) Tata Ace	-	2 No.
k) Tractor	-	1 Nos.

There is one small transfer station at Digboi Chariali (near Forest Office).

The duties and responsibilities of ULB's as per revised Solid Waste Management rules of 2016 & Faecal Sludge and Septage Management (FSSM) 2017 are given below:

- (i) The ULB's shall prepare a Solid Waste Management plan as per state policy within six (6) months.
- (ii) Arrange for door-to-door collection of segregated solid waste; integrate rag pickers/informal waste collectors in solid waste management.
- (iii) Frame bye-laws incorporating the provisions of these rules within one-year, prescribed user fee.
- (iv) Direct waste generators not to litter and to segregate the waste at source and handover does aggregated waste to authorized waste pickers, the waste collector authorized by the ULB.
- (v) Set up material recovery facilities or secondary storage facilities and provide easy access to waste pickers and recyclers for collection of segregated recyclable waste.
- (vi) Established waste deposition centre for domestic hazardous waste and ensure safe storage and transportation of the domestic hazardous waste to the

hazardous waste disposal facility or as may be directed by the state pollution control board.

- (vii) Direct street sweepers not to burn tree leaves collected from street sweeping and store them separately and hand over to the waste collectors or agency authorized by ULB.
- (viii) Provide training on solid waste management to waste pickers and waste collectors.
- (ix) Promote setting up of decentralized compost plant or bio – methanation plant at suitable locations in the markets or in the vicinity of markets ensuring hygienic conditions.
- (x) Collect separately waste from sweeping of streets, lanes and by-lanes daily or on alternate days or twice a week depending on the density of population, commercial activity and local situation.
- (xi) Involve communities in waste management and promotion of home composting, bio – gas generation, decentralized processing of waste at community level subject to control of odour and maintenance of hygienic conditions around the facilities.
- (xii) Educate workers including contract workers and supervisors for door-to-door collection of segregated waste and transporting the unmixed waste during primary and secondary transportation to processing or disposal facility.
- (xiii) Ensure that the operator of a facility provides personal protection equipment including uniform, fluorescent jacket, hand gloves, rain coats, appropriate foot wear and masks to all workers handling solid waste and the same are used by the work force.
- (xiv) Create public awareness on solid waste management.
- (xv) Provision for Faecal Sludge and Septage Management (FSSM) treatment plant is required under Digboi Master plan.

6.1.8 Electrical Sub –Station and Major Transformers

Power requirement of Digboi master plan area is meeting by the ASEB grid. There are 9307 electric connections i.e., almost 80% households electrically connected in the master plan area as per 2011 census. The Digboi Municipal Board area as well as rural area is facing the problem of acute scarcity of electricity like the other towns of the state. The below table shows the power demand in Digboi :-

Particular	2019	2020	2021	2022
Peak load (MW)	6.5	6.6	7.2	7.8
Off peak (MW)	3.5	3.4	4	4.5

Consumption is increasing at a fast rate due to increase in population as well as modernization of home appliances and on the other hand APDCL fails to

cater the needs of the people causing load shedding in peak hours. Peak load is predicted to grow at the rate of 0.5 – 1 MW in next three years and after that at the rate of 2.00 MW per year after 3 (three) years. Off peak load is predicted to grow at 0.5 MW per year for next 3 (three) years and 1.0 MW after 3 (three) years. ASEB has given proposals of a grid sub station at Baliyan or at Bogapani – Panbari area where grid line is available.

6.2 Social Infrastructure

6.2.1 Education facilities

The progress and development of a place is closely related to expansion, development and modernization of education facilities. The educational atmosphere in Digboi is good in comparison to nearby towns. For school level education, high quality educational institution like Delhi Public School, Carmel School, Vivekananda Academy provides educational facilities not only to the students Digboi but also the students to its adjoining areas as well as nearby towns. Beside these school, there are so many L.P and High Schools, Such as Digboi High School, Little Star School, R.D. English Academy, Janata Vidyalaya, Rashtriya Vidyalaya, Jatiya Vidyalaya, Digboi Sowmar Vidyapith, Kalibari Vidyamandir, Bapapung Lower Primary School, Baliyan Puberun L.P School, Itavata L.P. School and many other private plays house school providing school education in Digboi.



For higher education, Digboi college is a premier institution established in 1965 in Digboi Town. The key role performed by Assam Oil Company in the establishment of the college deserves special acknowledgement. In the last 50 years, the college has built up an impressive infrastructure.



Another important institution for the expansion of women's education in the region is Digboi Mahila Maha Vidyalaya which offers Higher Secondary courses and Bachelor Degree courses in the field of humanities. It was established in the year 1981.



Private educational institution, such as R.D. Junior College and Little Star Sr. Secondary School are also providing the facilities of Higher Secondary courses to the students of the region.

In vocational field Assam Oil College of Nursing is one of the premier institutions in the region. Epitome Centre provides computer education and for driving courses, Digboi Motor Driving Training School has also been established in Digboi. Digboi B.Ed College is established at Borbill No.1.

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6.2.2 URDPFI Guideline for Education facilities

TABLE NO-28					
NORMS FOR PRE-PRIMARY NURSERY SCHOOL TO HIGHER EDUCATION					
Sl. No	Category	Student Strength	Population served per unit	Area Requirement	Other Controls
1	Pre- Primary Nursery School	-	2500	0.08 Ha	To be located near park
2	Primary School (Class I to V)	500	5000	Area per School = 0.40 Hec. A) School building area = 0.20 Hec. B) Play field area = 0.20 Hec.	Play field area with a minimum of 18 m X 36 m to be ensured on effective play.
3	Senior Secondary School (VI to XII)	1000	7500	Area per School = 1.80 Hec. A) School building area = 0.60 Hec. B) Play field area = 1.00 Hec. C) Parking area = 0.20 Hec.	Play field area with a minimum of 68 m X 126 m to be ensured on effective play.
4	Integrated School without hostel facility (Class I to XII)	1500	90000 To 1 Lakh	Area per School = 3.50 Hec. A) School building area = 0.70 Hec. B) Play field area = 2.50 Hec. C) Parking area = 0.30 Hec.	To be located near a sport facility
5	Integrated School with hostel facility (Class I to XII)	1500	90000 to 1 Lakh	Area per School = 3.90 Hec. A) School building area = 0.70 Hec. B) Play field area = 2.50 Hec. C) Parking area = 0.30 Hec. D) Residential area = 0.40 Hec.	To be located near a sport facility
6	School for Physically Challenged	400	45000	Area per School = 0.70 Hec. A) School building area = 0.20 Hec. B) Play field area = 0.30 Hec. C) Parking area = 0.20 Hec.	To be located near park or sport facilities
7	College	1000 To 1500	1.25 Lakhs	Area per School = 5.00 Hec. A) School building area = 1.80 Hec. B) Play field area = 2.50 Hec. C) Parking area = 0.30 Hec. D) Residential area = 0.30 Hec.	

From the survey it has been found that most of the education institution except Delhi Public School and Carmel School, the area of the school is not sufficient as per **URDPFI** guidelines and there are no adequate play fields and parking facilities.

So, this plan suggests to take measures by the education department as well as private institution to increase the area of primary school up to 0.40 Hectare including playfield area, for Higher & Higher Secondary School up to 1.80 Hectare including playfield and parking area and for the intermediate school up to 3.50 hectare including playfield, parking facility and hostel facility as per URDPFI guideline.

This plan also suggests for the provision for school for physically challenged child / persons in an area of about 0.70 hectare for the enrolment capacity of 400 with adequate playfield and parking facility by the education department or by any NGO associated with social upliftment of the region.

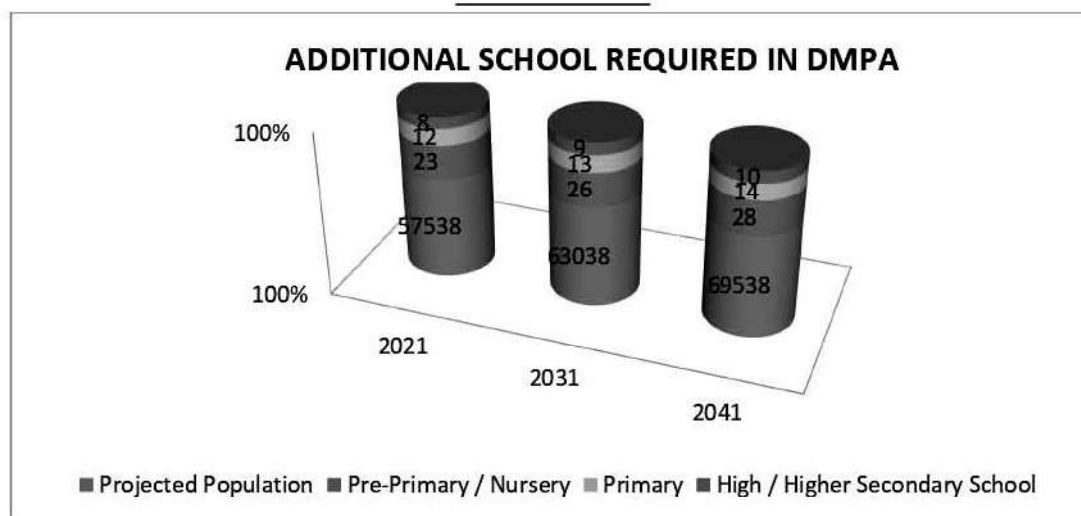
Table shows the number of students and additional school required in Digboi Master plan Area during 2011-2041.

As per URDPFI guideline, the additional school required in DMPA up to 2041 for projected population is given in the following table

TABLE NO-29
ADDITIONAL SCHOOL REQUIRED IN DMPA

YEAR	PROJECTED POPULATION	ADDITIONAL SCHOOL REQUIRED		
		<u>Pre-primary</u> <u>/Nursery</u> Student strength- 500 Population served per unit- 2500	<u>Primary</u> Student strength- 500 Population served per unit- 5000	<u>High/Higher Secondary</u> <u>School</u> Student strength-1000 Population served per unit-7500
2021	57538	23	12	8
2031	63038	26	13	9
2041	69538	28	14	10

Source :- Calculated by T&CP, Dibrugarh

FIGURE: -21

The shortage of schools in the plan area, to some extent has been fulfilled by the private institutions at present and it is also hope that in the future, private institutions will play an important role to mitigate the shortage of primary schools as well as High and Higher Secondary schools.

6.2.3 Health Care facilities

Digboi have a 30(thirty) bedded civil hospital situated within AOD campus, that serves the population of Digboi town as well as its adjoining areas. Besides this AOD have its own refinery hospital. In addition to these Digboi also have a nursing home. These hospital facilities along with the primary health care centers in the surrounding villages of Digboi mainly provides the services to the people of the region. Serious category patients generally rush to Assam Medical College, Dibrugarh situated at a distance of 80 Km from Digboi for better treatment.

URDPFI Guideline for Health Care Facilities

In the health care facilities, the size of a hospital depends upon the hospital bed requirement, which in turns is a function of the size of the population it serves. As per URDPFI guideline the calculation of number of beds is based on: -

- A) Annual rate of admission as 1 per 50 population
- B) Average length of stay in a hospital as 5 days.

Since the projected population for Digboi master plan upto the Year 2041 is 69,538, as such, the number of beds required for the said population is: -

- i) No. of beds days per year = $(69,538 \times 1/50) \times 5 = 6954$
- ii) No. of beds required with = $6954 / 365 = 19$
100% Occupancy

The classification of healthcare facilities as URDPFI guideline is given in the following table: -

TABLENO: - 30
HEALTH CARE FACILITIES

Sl. No	Category	No. of Beds	Population served per	Area Requirement
1	Dispensary	-	15000	0.08 to 0.12 Ha
2	Nursing home, Child Welfare & Maternity	25 to 30 beds	45000 to 1.00 Lakhs	0.20 to 0.30 Ha
3	Polyclinic	Some observation bed	1.00 Lakhs	0.20 to 0.30 Ha
4	Intermediate Hospital	200 Initially the provision may be for 100 beds including maternity beds	1.00 Lakhs	Total Area = 3.7 Ha. i) Area for hospital = 2.70 Ha. ii) Area for Residential Accommodation = 1.00 Ha.
5	Family Welfare Centre	As per requirement	50,000	Total Area = 500 Sq.m to 800 Sq.m
6	Diagnostic Centre	As per requirement	50,000	Total Area = 500 Sq.m to 800 Sq.m
7	Rehabilitation Centre	-	-	As per requirement

This plan suggests to take appropriate measures by the health department for the provision of 7 nos. of dispensaries at various location within the master plan area covering an area of 0.08 – 0.12 hectare per dispensary serving at least 15,000 persons. This plan also asked the health department to upgrade the existing civil hospital upto 200 beds with all modern healthcare equipment or serving at least 1 (One) Lakh population and asked the authority concern to increase the hospital area upto 3.7 hectare for the hospital building as well as the area for residential accommodation of the hospital staff. This plan also suggests to set-up a family welfare center to serve at least 50000 persons by the health department and also a Re-habilitation center by the Govt. or by any NGO for the upliftment of deprived class of the community.

6.2.4 Parks and Recreation Spaces

Digboi urban area have 3(three) playgrounds of which 2(two) situated within AOD area. India club established in the year 1918 is a premier institution for indoor game facilities. Digboi also have the facilities of sports like Lawn Tennis, Swimming and Golf. The 18-hole Digboi Golf course is one of the top most golf course in one of the top most golf course in the entire north eastern region. Culturally vibrant Digboi have also a numbers of community halls and social-cultural institutions like Poragdhara Chaliha Auditorium, Chariali Namghar and Digboi Kalibari. In Digboi for amusement there are 2(two) beautiful parks: 1(one)

is the Centenary Park and the other one is Digboi park. Digboi centenary Museum situated in AOD area is one of the rare kinds of museum throughout India which speaks itself the history of colonial rule in India. A community hall situated at DTC campus. In Digboi Master plan Area the existing land use for recreational purposes is 34.86 hectares. In this plan the proposed Land use for recreation purposes increase to 42.58 hectare keeping in mind the increase of population up to the year 2041. The land utilization rate for recreation purposes will be 0.64 hectare per 1(one) thousand population in the Master plan Area.



CHAPTER - 7

7. ENVIRONMENT, TOURISM AND CITY BEAUTIFICATION PLAN

7.1 Description of eco-friendly areas –

There are mainly seven eco-friendly/heritage sites in Digboi which became the pride of Digboi.

The small town of Digboi in the north eastern region of the country is the birth place of the oil industry in India. Digboi refinery commissioned on 11th December 1901 is India's oldest operating refinery and one of the oldest operating refineries in the world. The historic Digboi refinery has been term as the "Gangotri of Indian Hydrocarbon sector". Earlier owned an operator by the Assam Oil Company Limited/Burmah Oil Company, It came into the domain of Indian Oil Corporation Limited by an Act of parliament on 14th October, 1981 and became the Assam Oil Division of Indian Oil Corporation Limited. Today Assam Oil Division prides in having some flagship CSR project namely IOCL (AOD) hospital, Assam Oil School of Nursing, Shikshak Dakshyata Vikash Abhiyan among many other regular socially committed initiatives.



Digboi War Cemetery is a cruel reminder of the effects of war. In the War Cemetery, rest the souls of warriors who lost their lives during Second World War braving the attack of Japanese. The Cemetery was initially on hill top and subsequent to an earthquake that destructed the cemetery, it was shifted to the present location. In the cemetery there are 191 identified burials and a few unidentified ones mostly British and Indian soldiers.



The oil heritage of Digboi has been carefully preserved at the Digboi Centenary Museum suitably located around India's first oil well (drilled in the year 1889). This is caring for heritage project tells us the over hundred years old story of Digboi through unique exhibits, equipment's, plants and knick-knocks





Digboi Centenary Park is the most beautiful park in whole north-eastern region. Tourist visit the park for enjoying picnic as well as spend holidays.

Amidst the blue hills and the green tea gardens, the British left behind a picturesque golf course in Digboi. This Golf Course always reminds us of British colonial role in India. Digboi Golf Course is considered one of the best Golf Courses in entire north eastern region. This world class 18-hole golf course has hosted many tournaments, both national and international.



The Victorian bungalows in Digboi, more than a century old, will take us back in time to the colonial period. The unique 'Chang Bungalows' built by the British, standing one in each hillock, surrounded by well-maintained lawns and small kitchen gardens will mesmerize us.



The region in and around Digboi is home to a variety of flora and fauna and is the pride of Assam. Sightings of many wild animals like deer, tiger and the Asian Elephants are not rare in the region. The region has also become quite a popular bird watching destination for bird watchers over the last few years.



7.1.1 Tourism

Tourism is a social and economic phenomenon that heavily influences contemporary society (Crick, 1996). Nowadays, tourism industry can be considered as business behaviour since it might influence the development of a local economic. The secret for a successful destination is to approach the right target market and to provide an appropriate combination of local tourism products and services. Tourism is now-a-days considered as an important industry which has vast scope for the generation of income and employment. It is one of the world's fastest growing industries, a major source of foreign exchange earner of a nation and a measure for resolving interstate and inter community conflict.

The town of Digboi is quite a colorful, vibrant but tiny location situated in the north-eastern part of India in the Upper Assam Valley.

Digboi town already known for its historic finding of first crude oil and also a destination for tourist. The tourist visits this place mainly to see the Oil field, Digboi peak, Digboi Oil Museum, War cemetery and golf course etc.



7.2 Plan/Measures for protection and conservation of environmentally-friendly zones.

Being environmentally friendly simply means having a lifestyle that is better for the environment. It's all about taking small steps towards mother earth so as to make this planet a better place for our communities and generations to come. A good way would be to start with conserving water, driving less, walking more, consuming less energy, buying recycled products, eating locally grown vegetables, joining environmental groups to combat air pollution, producing less

waste, planting more trees and many more. The more that we do on our part the faster we will create an environment of living that promotes sustainability.

In the environmentally friendly zone, there is more than just a good recycling programmed in place. People of the town who are committed to conservation and preservation of resources should encourage options like community play grounds, public transportation, green construction and work to change the way that fossil fuels and other resources are used to support community services.

This plan suggests following proposals for protection and conservation of environmentally friendly zones-

- (i) People of Digboi town should join hand with environmental groups to protect the town and make the environment clean and green.
- (ii) Reduce, reuse, recycle waste hierarchy is the order of priority of actions to be taken to reduce the amount of waste generated and to improve overall waste management processes and programs.
- (iii) Plantation habit should be grown up among the people. For this necessary awareness camp should be organized by competent authority for conservation of natural resources and composting system.
- (iv) Steps should be taken by the authority to stop people from littering on roads. Instead, educate them to put trash and garbage in dustbins. The pile of garbage on road hampers the beauty of the city and also pollutes the air.
- (v) Steps should be taken by the AOD authority to reduce the emitted hazardous chemical and gases in its refining process.

7.3 City Beautification Plan/ parks proposals-

To improve town's appearance and aesthetic view, neighbourhood often try to update what is known as streetscape, which pertains to the area between the driving lanes and the edge of the private property. Partly this is a popular strategy because it is public space and it's easy for the government to dictate what will happen there. In truth, streetscape can be quite effective in uniting block faces or a series of blocks that are discordant in some way, because streetscape often includes plantings, the effect is to soften the view created by streets and hopefully sidewalks. Care in the choice of materials and in the quality of the installation makes all the difference in this form of beautification.

In addition to streetscape, sometimes we need a focal point. This might be public art and open-air theatre, fountains, a clock tower or grouping of tall

grasses. If we already have a lonely statue or old historical building with nothing around it, maybe we should add planting beds of considerable size, an inviting bench or two, and may be an interpretive sign explaining the rest of the store". A tree planting project, either on a vacant plot, in a park, or in the parkway between the side walk and the street is great for improving towns appearance over the course of a few years at a relatively low cost. Voluntary schemes should be taken up by neighbourhood basis for cleaning up the park of the town. Project should also be taken up for cleaning the river or stream.

The plan proposes parks in Digboi Master Plan Area as mentioned below: -

1. Near proposed Solid Waste Management site (5 No. Golai)
2. Borbill Gaon Pt- 2

7.4 Roadside Plantation-

The main object of road side plantation is to provide protection to road, traffic, check soil erosion, food, fuel, fodder and timber to the society and mitigate climate change issues. Plantation is durable assets that produce fruits and raw-materials for agro based industry, and also generate livelihood after 7 to 10 years.

This plan suggest the social forestry department to prepare project on road side plantation with details of road to be covered , length of road and species of plants to be planned with numbers of plants for entire Digboi master plan area.

Plantation of fruit bearing plants, suitable to local agro-climatic condition should be done in every area of the master plan. The authority concern should take steps for organizing camp and awareness program for road side plantation and educate the people about the benefits of road side plantation including its impact on city's landscape.

7.5 Urban Agriculture and Urban forestry.

Urban Agriculture is the new culture that is catching up in emerging cities. Since the population growth rate is very high, natural resource to feed the increasing population in coming days is going to be a difficult task. So, urban agriculture is seen as a big solution to the problem.

Urban forestry is the careful care and management of tree in urban settings for the purpose of improving the urban environment. Urban forestry advocates the role of trees as a critical part of the urban infrastructure. Urban forest function is thus often oriented toward human outcomes, Such as shade, beauty and privacy. Urban forests bring many environmental and economic benefits to town. Among these are energy benefits in the form of reduced air conditioning, reduced heating by shading buildings, homes and roads, absorbing sunlight, reducing ultraviolet light, cooling the air and reducing wind speed.

So, urban forestry scheme should be taken by competent authority for afforesting degraded forest land in the Digboi master plan area. This type of scheme will act against climate change by creating a carbon sink and against air pollution in the town. This plan also suggests for starting tree surveys in the town which can be conducted by NGO and college or school students. A plan should be framed to create small nurseries in Govt. school as well as in private institution where there is extra space.

7.6 Public Rain Water Harvesting Scheme

Rainwater harvesting is a process involving collection and storage of rain water that runs off natural or man-made catchment areas, e.g. roof top, Compounds, rock surface or hill slopes or artificial repaired impervious/semi-pervious land surface.

Due to deforestation and the consequent ecological imbalance, the ground water level is going down day by day. The constant rising demand of water supply especially from the urban areas does not match with the surface water sources, as a result of which the water reserves beneath the ground level are over exploited. This consequently results in the water level depletion.

Water harvesting apart from recharging the ground water level, increases the availability of water at a given place at a given point of time. It also reduces the power consumption. It further reduces the run off which chokes the storm water drains, artificial flooding, chances of soil erosion and improves the quality of water. The plan suggests rain water harvesting scheme to be implement by a competent authority. Moreover, the urbanization trend reduces the infiltration rate of rain water into the sub-soil there by reduces ground water recharging.

7.6.1 Development of Parks and Recreation Spaces-

The Plan recommends 42.58 hectare of land for recreational purposes. The plan envisages a Town hall to meet the social and cultural needs of the town and also recommends modernizing the existing play ground with adequate infrastructure. The plan also proposes an indoor stadium at Padma Nath Gohain Barua Road, Ward No-8 and a small size children parks at each neighbourhood area and in composite zones.

7.6.2 URDPFI Guideline for Parks and Recreation Spaces

The provision of socio- cultural facilities shall correspond to the changing urban demography and work life style.

TABLENO: -31**NORMS FOR SOCIO- CULTURAL FACILITIES**

Sl.No	Category	Pop. Served per unit	Land Area Requirement (Sq.m)
1	Aganwadi- Housing area / Cluster	5000	200-300
2	Community Room	5000	750
3	Community hall / Marriage Hall/ Library	15000	2000
4	Music, dance and drama centre	1 Lakh	1000

TABLENO:-32**NORMS FOR RECREATIONAL FACILITIES**

Sl.No	Category	Population Served per unit	Area Requirement (Ha)
1	Housing Area Park	5000	0.50
2	Neighborhood Park	15000	1.00
3	Community Park	1 Lakh	5.00

TABLENO:-33**NORMS FOR SPORTS FACILITIES**

Sl.No.	Category	Population Served per unit	Area Requirement (Sq. M)
1	Residential unit play Area	5000	5000
2	Neighborhood Play Area	15000	1.5
3	Town sports centre	1 Lakh	8.00

7.7 Beautification of Major Transit Zone

Digboi has emerged as a major transit zone for Petroleum and its by-products mainly originating from AOD refinery. Tea of Digboi transit to all over India. So, it is very much essential to beautify and upgrade the major traffic points like bus stand, railway station, market area of this emerging transit zone of upper Assam.

7.8 Road Signage and Street Furniture

Road signs are signs erected at the side of or above roads to give instruction or provide information to road users. The earliest signs were simple wooden or some milestones. But in course of time, many states of India have been adopting pictorial signs or otherwise simplified and standardized their signs to overcome language barriers and enhance traffic safety, such pictorial signs use symbols in place of words.

Street furniture is a collective term for objects and pieces of equipment installed on streets and roads for various purposes. It included Benches, traffic barriers, bollards post boxes phone boxes, street lamps, traffic lights, traffic signs, bus stops, taxi stand, public lavatories fountains, public sculptures and waste receptacles an important consideration in the design of street furniture is how it affects road safety.

In Digboi Master plan Area existing road signs and furniture are inadequate for increasing traffic and those are not also scientifically designed.

So, the plan suggests to authority concern to take steps for the installation of warning, priority, prohibitory, mandatory, information, facilities, service, direction, position and indication signs in the roads of Digboi town, so that local people as well as outsiders can be benefitted and road safety can be maintained.

In Digboi Master plan area presently there is no street furniture necessary for the public. The concern authority should take steps for the construction of public lavatories at important public places and installation of benches in the park and public places, post boxes, bus stop, taxi stand, waste collectors etc.

This plan recommends for preparation and execution of a city beautification plan covering street light, traffic signal etc. that will enhance the beauty of this resource full town.

7.9 Tourism Issues

Digboi town and its suburbs have immense potential and scope for the tourism industry. Digboi is best known for oil & natural gas reach region along with unique natural beauty with flora and fauna& cultural festivals. The various places of visit can be nature related, religious, historical etc. Some of the problems of tourism in Digboi include proper signage's, tourist facilities, etc.

7.10 Tourism Potential

Capacity Building

- Selected villages should be given assistance for showcasing of handlooms and handicrafts to help the villagers sell their products.
- If necessary, we can have these exhibition centres for a group of villages also. These will help to sustain the crafts as these activities will help generate income for the villagers.
- Local youths can be trained to become tourist guides. They already have adequate knowledge about the places; they just need to be trained to enhance their soft skills so that they are in a better position to interact with the tourists.
- To develop a proper website, that enables to give enough information to domestic and foreign tourists.

Draft Proposal for Cultural hub cum park

- One cultural hub come park could be developed where the art of the different community people can be placed, and the place should be designed in such a way that it should be environmentally friendly.
- One side of the hub can be used to exhibit their traditional ornaments, dresses and food so that tourist can also enjoy their culture and tradition.
- The other side can be used for recreational which includes landscape and sculptures.
- The facilities like parking, drinking water and toilets should be provided inside the park.



CHAPTER -8

8. LAND USE PLAN

8.1 Developable and Non – Developable Area of the Master plan

Urban growth and development are often conditioned by the natural landscape like hills, water bodies, forests and manmade impediments like railway line, major roads & canals etc. It is also conditioned by the resources and technology employed in overcoming the impediments and constraints.

Existing Digboi Master plan covers both flat and hilly land. Except upper Dihing forest within the industrial area, there is no other physical feature acting as a constraint for development. The soil is very fertile and good vegetation and tea garden is observed in the region.



The quality of urban life and its functional efficiencies are governed by its land-use pattern. In order to understand and analyse systematically the functional relationship between various uses particularly the place of living, business place, industrial activity, education, recreation, agricultural activity etc., a detail land-use survey was conducted during the year 2016-17 and analyzed up to the year 2018 to estimate the present and future need of the urban area as well as master plan area. Digboi master plan covers an area of 2918.04 hectare (29.18 sq.km.), out of which developed area is 1814.46 hectare (18.14 sq.km.) i.e., 62.18 % of the total plan area and non-developed area is 1103.58 hectare (11.03 sq.km.) i.e., 37.82 % of the total plan area.

8.2 Existing Land Use

The existing land use and the areas occupied by each use in Digboi master plan area is shown in the following table: -

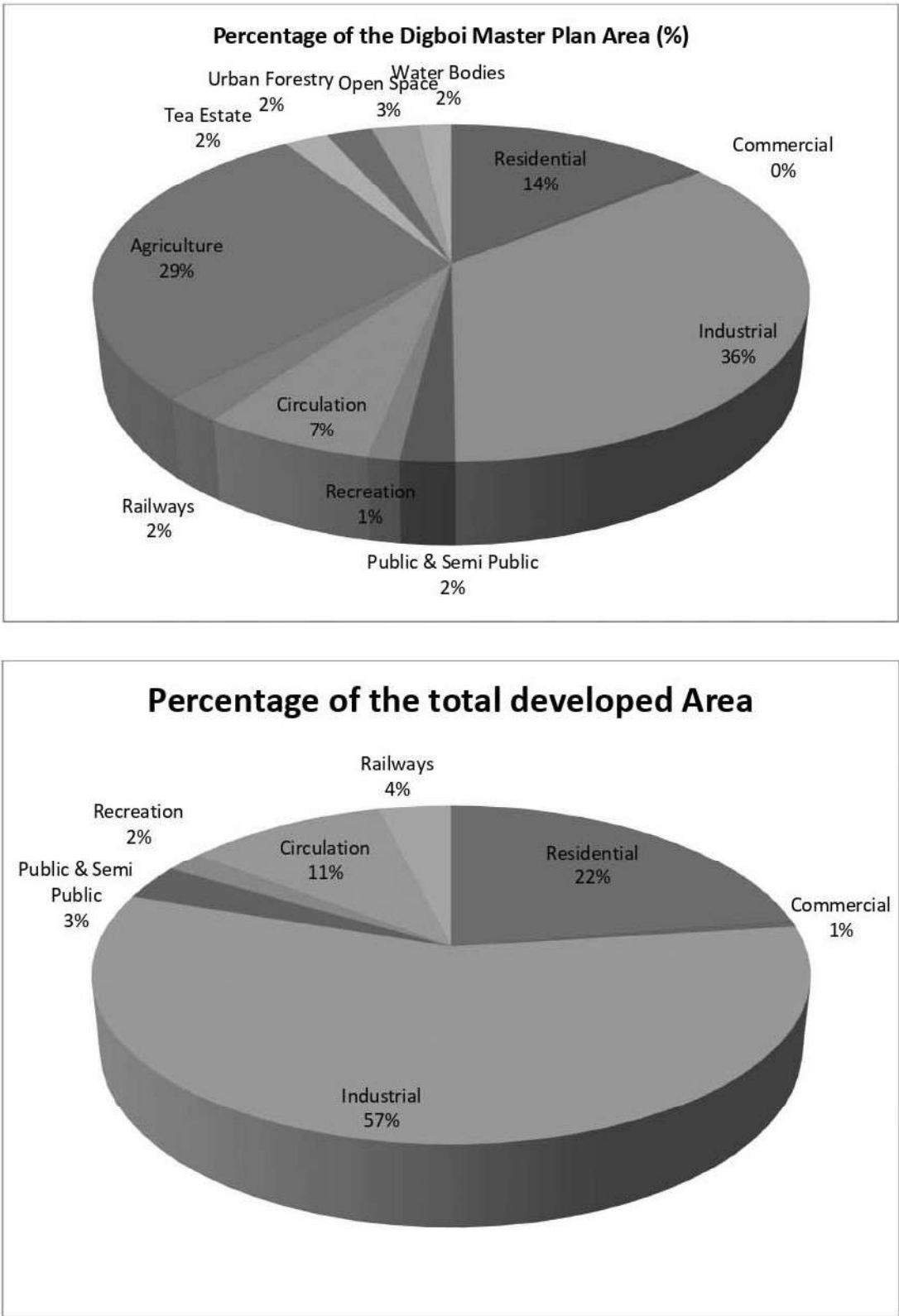
TABLE NO-34

EXISTING LAND USE - DIGBOI MASTER PLAN AREA IN 2017.

Use		Digboi Master plan Area in hectare	Percentage of the Digboi Master plan Area (%)	Percentage of the total developed Area (%)
1		2	3	4
Residential		407.36	13.96	22.46
Commercial		10.54	0.36	0.58
Industrial		1036.50	35.52	57.14
Public & Semi Public		60.96	2.09	3.36
Recreation		34.86	1.19	1.92
Circulation		194.66	6.67	10.73
Railways		69.58	2.38	3.84
Total developed area		1814.46	62.18	100.00
Agriculture		838.4	28.73	--
Green Belt	Tea Estate	68.66	2.35	--
	Urban Forestry	72.24	2.48	--
Open Space		72.68	2.49	--
Water Bodies		51.60	1.77	--
Total Un Developed Area		1103.58	37.82	
Grand Total Plan Area		2918.04	100.00	

Source: - Town & Country Planning, Dibrugarh Land Use Survey 2017.

Figure-22



In Digboi Master plan Area, 407.36 hectare of land (22.46% of total developed area land), is use for residential purposes, excluding the land use for

residential purposes in Digboi oil town. Land use for residential purposes in Digboi oil town has been shown as industrial area land in the land use map. New residential areas have been developed in the last few years at no. 2 & 3 Borbill Gaon, no. 1 & 2 Gulai Gaon and at no. 2 Bapapung Gaon.

In DMPA, 10.54 hectare of land is used for commercial and business purposes. The business area in Digboi spread over both side of NH-38 from north to south up to Digboi tiniali point and along the road side of Digboi Pengeri road. Vegetable, grocery and food market located in compact manner at Digboi tiniali point. Digboi new market is located within the industrial area. The roads being narrow, no provision of parking area in market places and on road parking of all types of vehicles including commercial vehicles at Digboi tiniali point create traffic congestion in the area. In the recent years some business activity is going day by day along NH-38 in Gulai area.

In the map of India, Digboi occupies the place of industrial town and this has been proved in the Master plan of Digboi because industrial areas occupy 1036.50 hectare of land, i.e., 35.52% of total Master plan Area.

The land use for Public and Semi-public purposes including educational institutions, government offices, health care etc. are 60.96 hectare, which is 3.36 hectare of total developed area land of the Master plan. The land uses under this had is scattered all over the Master plan Area.

In DMPA, 34.86 hectare of land (1.92% of total developed land) is used for recreational purposes. Out of this a major portion has been used as golf course. Besides there are three fields for outdoor games, tennis court, indoor stadium, swimming pool, Centenary Park and various other open spaces fulfill the recreational activity of the people of Digboi.

Transportation & circulation network of a town or planning area plays an important role and affects immensely the economic and socio-cultural life of the planning area. A well-developed road network can provide answer to many problems of urban life. Accordingly, in DMPA, the land use for circulation purposes is 194.66 hectare, which constitutes 10.73% of the developed land.

Railways occupy an area of 69.58 hectare of land (3.94% of the total developed land). The railway track is passing all along through the Master plan Area from no.3 Borbill Gaon to no.2 Gulai Gaon. The railway station is situated within the industrial area.

In DMPA, land use for agricultural purposes is 838.4 hectare (28.73% of the Master plan Area). Agricultural activities are mainly taking place in no.1 Borbill Gaon in the north of Master plan and no.1 Gulai Gaon in the south. In the

planning area, green belt (tea estate) occupies 68.66 hectare (2.35% in the Master plan Area) of land. There are mainly 3 (three) large tea garden within planning area at no.1 Borbill Gaon, no.2 Borbill Gaon and at no.1 Gulai Gaon.

In DMPA, a green belt (urban forestry) covers an area of 72.24 hectare (2.48% of the Master plan Area) of land. there are 3 (three) green belt block within the Master plan, one block is situated in the west of Master plan at left side of Digboi-Duliajan road, another in the east of Master plan at right side of Digboi-Pengeri road and the last one situated between DPS and Golf course. Open space constitutes an area of 72.68 hectare (2.49% of the Master plan Area) of land. Small size open space area scattered all over the Master plan and one big block of open space has been seen in the north of Master plan at no.1 Borbill Gaon on both side of proposed bypass. Water bodies constitute an area of 51.60 hectare (1.77% of the Master plan) of land.

Key Issues / Shortcomings

1. Hierarchy of road network is not found in municipal area and narrow road network with restricted capacity, traffic congestion due to number of railway crossings and loss of productivity etc.
2. The parking spaces are inadequate in Municipal area.
3. Inadequate recreational facilities outside the Digboi Oil town.
4. Due to illegal vending sometimes the actual accessible patch of road is decreased to half lane only.
5. Incomplete water supply project.
6. Lack of adequate social infrastructure with limited access in Municipal and rural area.
7. Coverage of drainage system is not sufficient in Master Plan area.
8. Lack of proper solid, Hospital and E waste disposal and management system.
9. Encroachment of National Highway land and Railway land.
10. **Lack of Fire service in Municipal area.**
11. Non-existence of notified industrial area outside Oil township.

Strength Of Digboi

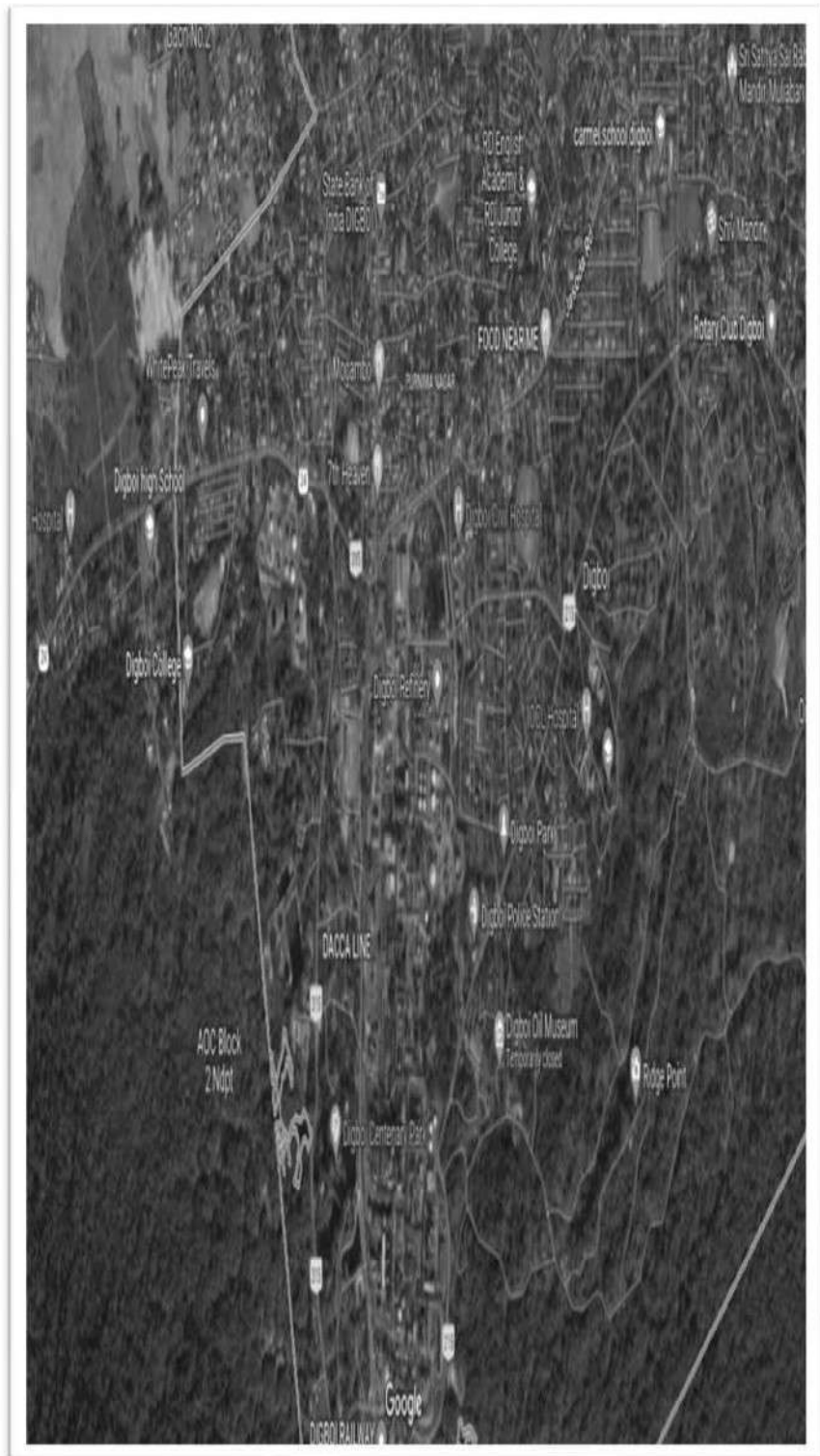
- Well connected by road and railway.
- OIL industry.
- Unique natural landscape with tea gardens.
- Glorious history of oil exploration of India.
- Diverse culture and social harmony.
- Tourism (Oil, Tea, Golf, etc.)

8.3 Proposed Land use:

Land use planning has a bearing on the expansion of the town and put pressure on outer growth area and in rural areas. A change in urban economic function changes its population growth.

The decision to set up administrative block, commercial activities, industrial estate, educational institution, health care as well as any government policy to stimulate the urban economy accounts for population growth as well as create opportunities for employment and business expansion.

The proposed Digboi Master plan covers an area of 2918.04 hectare (29.18 sq.km.), out of which about 2107.8 hectare (72.23%) of land is proposed to be developed up to the year 2041 for a projected population of 69538 persons.



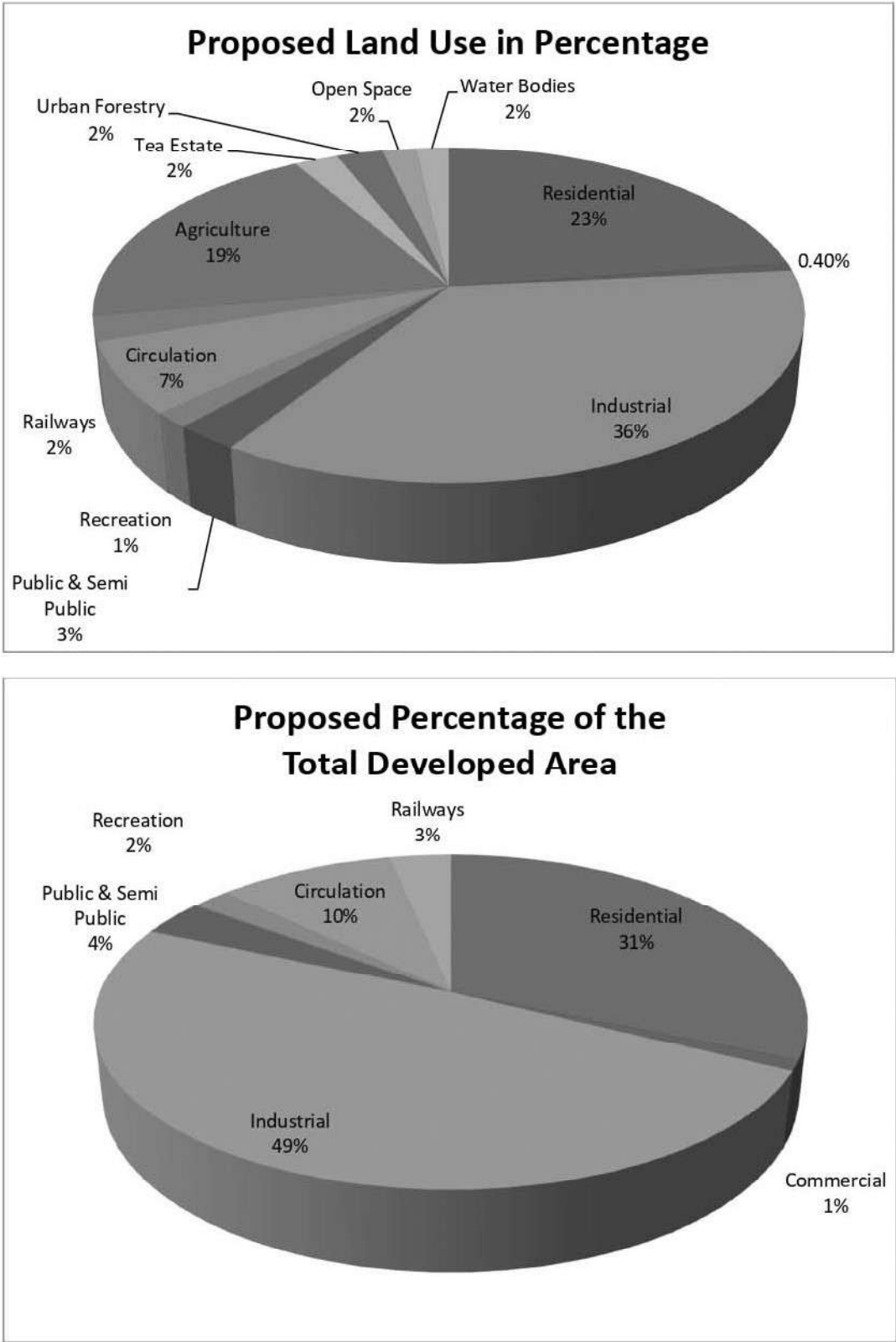
The following table shows the proposed distribution of land use in Digboi Master plan Area up to 2041.

TABLE NO-35**PROPOSED LAND USE - DIGBOI MASTER PLAN AREA UP TO 2041.**

Use		Digboi Master plan Area in hectare	Percentage of the Digboi Master plan Area (%)	Percentage of the total developed Area (%)
1		2	3	4
Residential		662.05	22.69	31.41
Commercial		20.69	0.71	0.98
Industrial		1036.50	35.52	49.17
Public & Semi Public		73.75	2.53	3.50
Recreation		42.58	1.46	2.02
Circulation		202.68	6.95	9.61
Railways		69.58	2.37	3.31
Total developed area		2107.80	72.23	100.00
Agriculture		565.07	19.37	--
Green Belt	Tea Estate	68.66	2.35	--
	Urban Forestry	72.24	2.48	--
Open Space		52.64	1.80	--
Water Bodies		51.60	1.77	--
Total Un Developed Area		810.21	27.77	--
Grand Total Plan Area		2918.04	100.00	--

Source: - Town & Country Planning, Dibrugarh Land Use Survey 2017.

Figure-23



An area of 662.05 hectare or 22.69% of the total master plan area has been earmarked for residential use for projected population of 69538 persons up to the year 2041. It is presumed that a part of the total projected population will be residing in the mixed used areas. In the plan a RLDS scheme has been proposed at No.2 Gulai Gaon. In the proposed land use plan, the population density of the master plan area in the year 2041 will be 23.83 persons per hectare or 2383 persons per sq.km. The residential density is 23.34 dw/hect. or 105 persons per hectare up to the year 2041. The following gross residential density is recommended in the plan: -

1. Low density : up to 50 persons per hectare
2. Medium density : 50 - 120 persons per hectare
3. High density : 120 - 200 persons per hectare

Land earmarked for commercial activities is 20.69 hectare besides AOD market within the industrial area. In the plan new commercial activities has been proposed along road side of NH 38 at no.1 Borbill gaon, along the Digboi-Pengeri road, along NH 38 at no.1 Gulai gaon and along the road of Digboi-Duliajan road. In the plan a ware house has been proposed at no.2 Gulai gaon.

The land occupied by AOD is more than 1000.00 hectare and which is earmarked in the plan as an industrial area. Within the industrial area AOD refinery, office complex, housing colony, market complex, health care facilities, park and sports fields are situated. A large portion of land in the Northern part of the industrial area is a hilly terrain with the existence of dense forest. In the plan Solid Waste Management site has been proposed at Golai No.5 covering an area of 10 Bigha (approx).

In the proposed land use plan, the land earmarked for circulation is 202.68 hectare. In the plan new roads has been proposed to link up the sub-arterial and other road to arterial road. Besides for the efficiency of circulation pattern taxi stand and truck terminus has also been proposed in the plan.

In the plan the land earmarked for Public and Semi-public activities increases to 73.75 hectare for establishing Govt. offices and education institution for the growing population. In the same way to meet the demand of growing population, the area earmarked for recreation facilities has also been increased to 42.58 hectare for festablishing parks and indoor game facilities.

The plan proposes open space of 52.64 hectare i.e. 1.80 % of the planning area and the plan earmarked open space under the category of no construction zone. An area of 51.60 hect. i.e. 1.77 % of the planning area has been earmarked as water bodies in the proposed master plan map. **The plan proposes 15mtr buffer zone or no construction zone along natural water channel, ponds, river and wetland inside municipal area and 30 mtr outside municipal area.**

8.4 Composite Zones or Mixed Zones:

With increased urbanization, the demand for housing increased manifold. As such, this plan proposes a Residential Land Development Scheme at no.2 Gulai Gaon covering an area of 17.00 hectare to accommodate 1500 persons or 300 households. The development of this new residential area should be done on the basis of micro/block level planning where all urban problems will be mitigated. The block will cover by small play field with parks for providing recreational facilities to the children of the block. Other facilities included in the scheme are such as 24 hour's electricity and water supply well equipped drainage facilities neighborhood shopping centre, first aid facilities and provision of kindergarten school.

The land used for administrative purposes within Digboi Municipal Board area is deficient. The existing land area of School and Colleges are also far behind the norms. So, this plan suggests to Authority concern to set up an Administrative Block at a suitable available Govt. land within the municipal area for the centralization of administrative works, so that people's harassment reduce to some extent. In the same way this plan also suggests to increase the land area of school and colleges to reduce the utilization rate by allowing mixed growth.

CHAPTER- 9

9. PROPOSED PROJECT, BRIEF AND TENTATIVE FUNDING SOURCE

9.1 Identify Priority Sectors and Project

The plan proposals for Digboi Master plan Area spread up to 2041. It is quite obvious that the natural development will continue and the private developers will play an important role in this respect. As such, the private development is encouraged in conformity with the Master plan. It is strongly recommended to stop unplanned and sporadic developments but to encourage balance planned and sustainable development where the provision for necessary physical infrastructure and socio-economic amenities are economically made possible. There are some immediate necessities as pointed out by the various stake holders, which are to be taken up as priority schemes for the Master plan Area which is listed below:

Short Term Proposals

1. Improvement of roads, with street lights, traffic signal points and demarcation of notified parking area, road signage and street furniture.
2. Improvement of existing market situated at Digboi tiniali into a well-planned, people friendly business hub.
3. Construction of Slaughter house.
4. Improvement of existing hospital and dispensaries.
5. Proposal for Fire & Emergency Service,
6. Walking Track
7. Protection & preservation of low lying area, natural channel and ponds
8. Preparation of Drainage master plan
9. Provision for vending zone in master plan area.

Long Term Proposals

1. Widening of roads as per IRC guidelines with provision of Utility duct.
2. Railway overbridge (ROB) at NH- 315 (new) 38 (old)
3. Proposal for Cycle Track in the master plan area
4. Improvement of existing Bus station.
5. Proposal for Freight Zones & Logistic
6. Propose truck terminus & taxi stand
7. Construction of ware house etc.
8. System of regular collection and disposal of garbage in the master plan area by the concerned authority.

9. Scheme for Solid waste Management system as per waste management Rule, 2016.
10. Faecal Sludge Treatment Plant
11. Effluent Treatment plant
12. Town planning scheme for all sections of the Society considering the scenic beauty of the town.
13. Construction of a Library, Tourist lodge and a Marriage Hall.
14. Construction of a Town Hall, Auditorium & old age home.
15. Construction of Vendor and Hawker market.
16. Construction of Indoor stadium.
17. Proposal for fuel filling station and LPG go down.
18. Setting up of Micro Small and Medium Enterprises (MSME).
19. Proposal for improvement of burial and cremation ground.
20. Proposal for parks
21. Water supply scheme
22. Rural economic growth
 - Organic farming industry.
 - Floriculture
 - Agricultural Credit Societies
 - Provision of Hut/Shed for weekly markets.
23. Proposal for installation of fire hydrant at market place and strategic location of the town.

In the first phase, the schemes like widening and improvement of roads, construction of new roads, scheme for slum area up-gradation and relocation, provision for required spaces for parks, playgrounds and parking places and improvement of commercial and market areas including existing market, daily bazaar, walking track, road signage etc. can be taken up. The Municipal Board has to play an important role visioning with other Govt. agencies in formulation and execution of such schemes in the master plan area. All the above schemes need to be carried out to make the plan area in to healthy place of living.

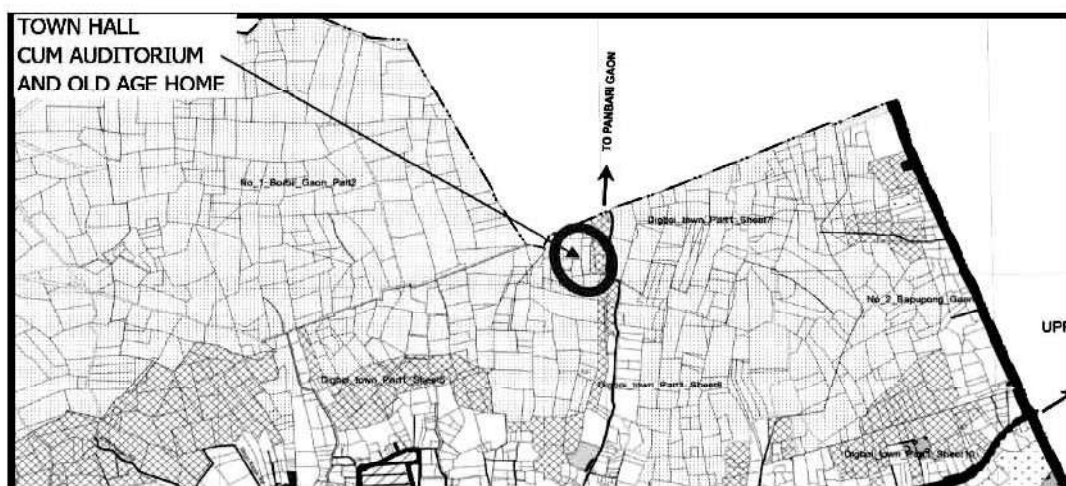
9.2 Fund Requirement for each Sector/ Project

Fund requirement for each sector project will be finalized by the ULB and concerned line departments after preparation of detailed project report as per Govt. instruction.

9.3 Identify Land Site for Proposal

The plan finds the following sites are suitable for taking up the proposals in accordance with the existing trends of growth as well as for balanced development.

- (1) Town Hall / Old Age Home / Auditorium at Digboi Town Pt 1 Sheet 7 (AT Panbari Gaon Road)



- (2) Development of Parking area: Near Bus stand
- (3) Library / Tourist Lodge/ Marriage Hall & Fire & Emergency Service: At No. 1 Borbill Gaon Part-1



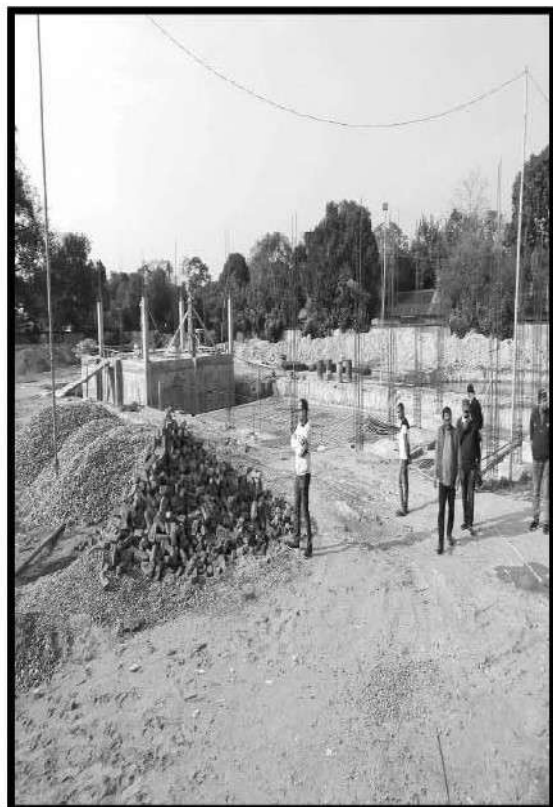
(4) Indoor Stadium: At Padma Nath Gohain Barua road, ward No-8



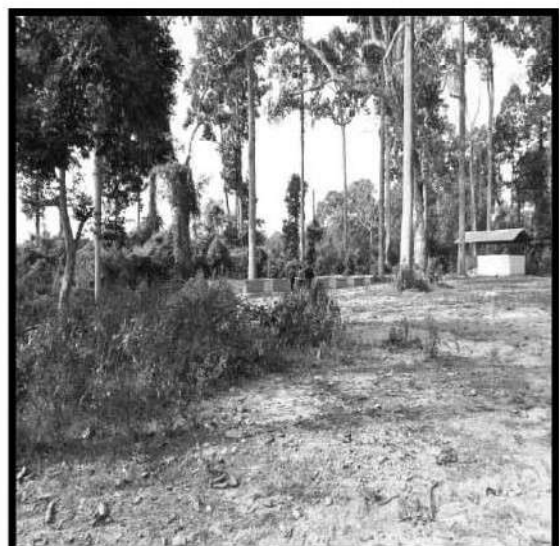
(5) Truck Stand & Taxi Stand: At No.1 Borbilgaon



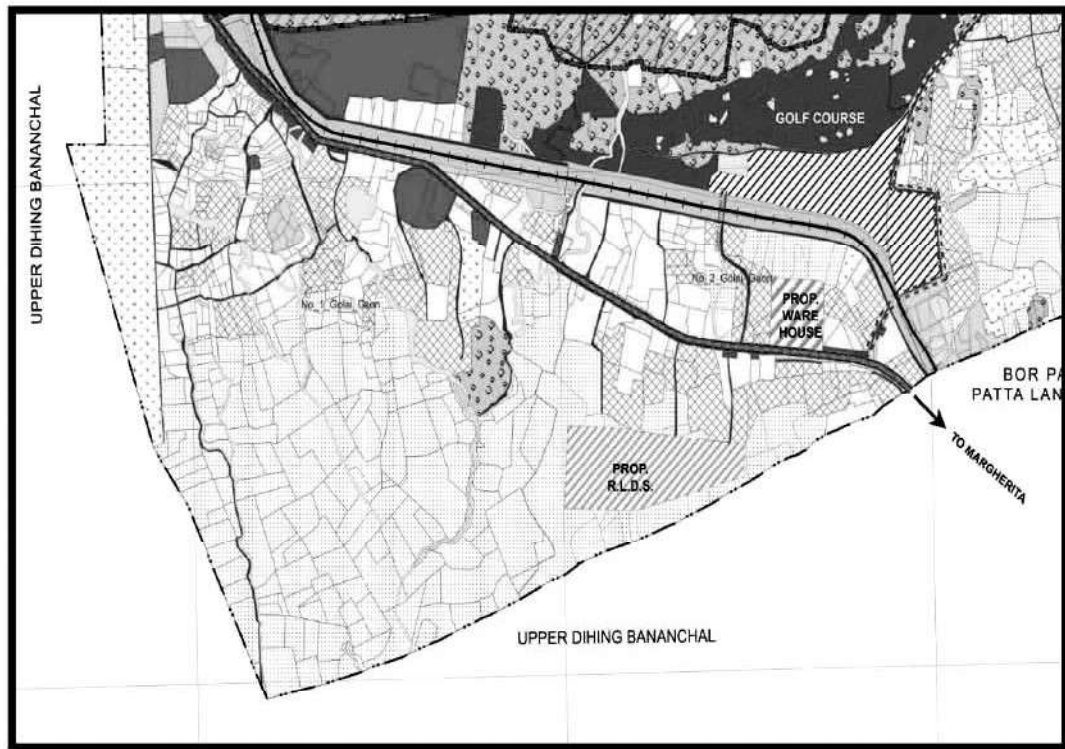
(6) Water Supply Scheme: At Kalibari area Ward No-2



(7) Solid Waste Management System & Faecal Sludge Treatment Plant: -At No.5 Golai.



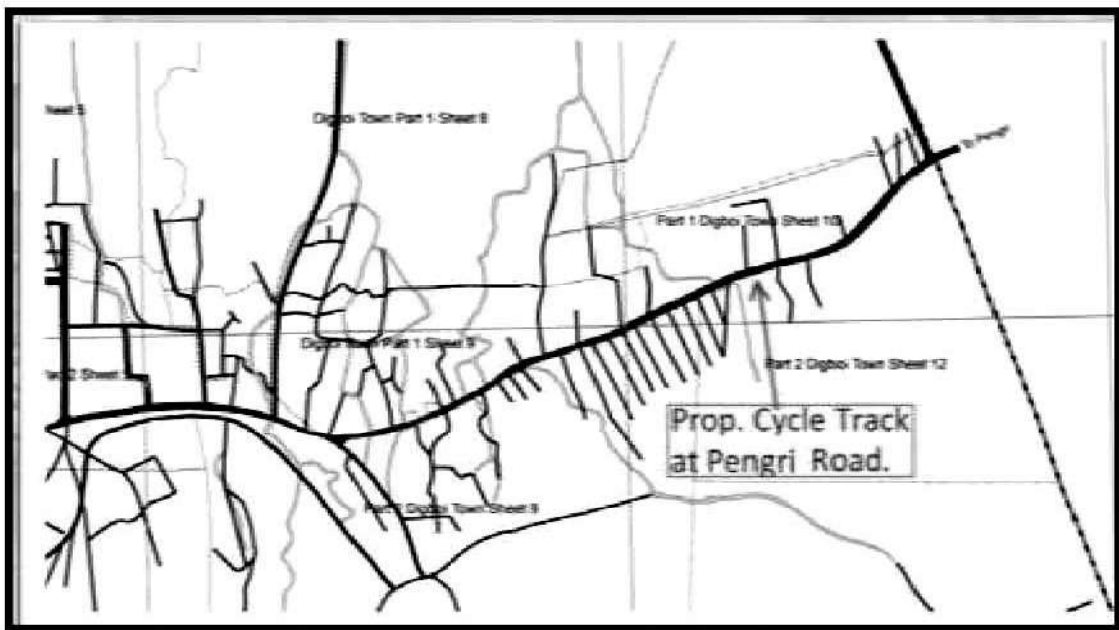
(8) Residential Land Development Scheme: - At No. 2 Golai Gaon



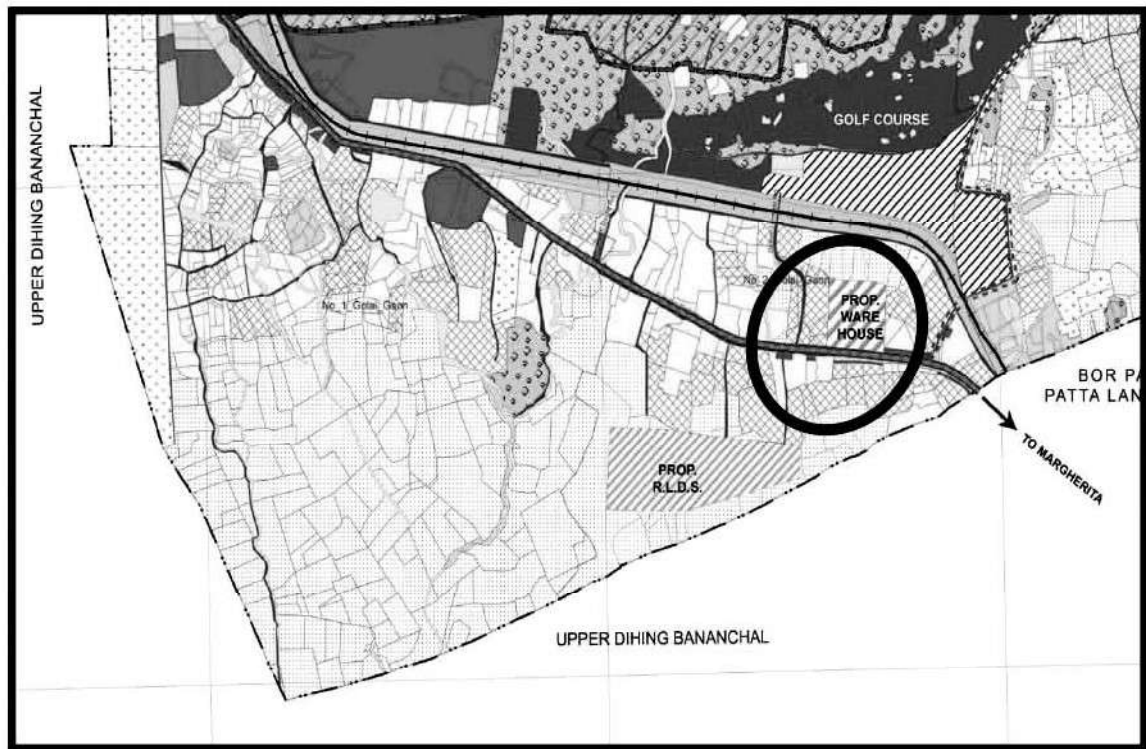
(9) Oil filling station: At No.1 Borbill & No.2 Golai

(10) LPG godown :- At No.2 Golai

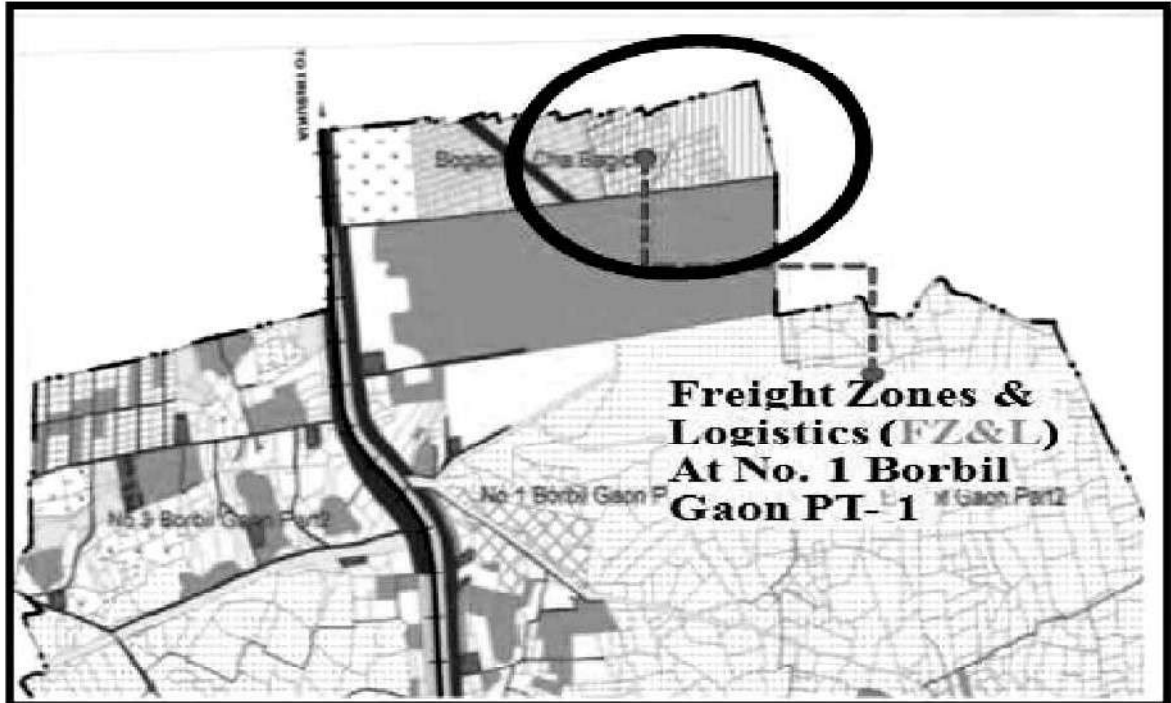
(11) Cycle track: - At Digboi Pengeri Road (near War Cemetery)



(12) Ware House: At No.2 Golai Gaon



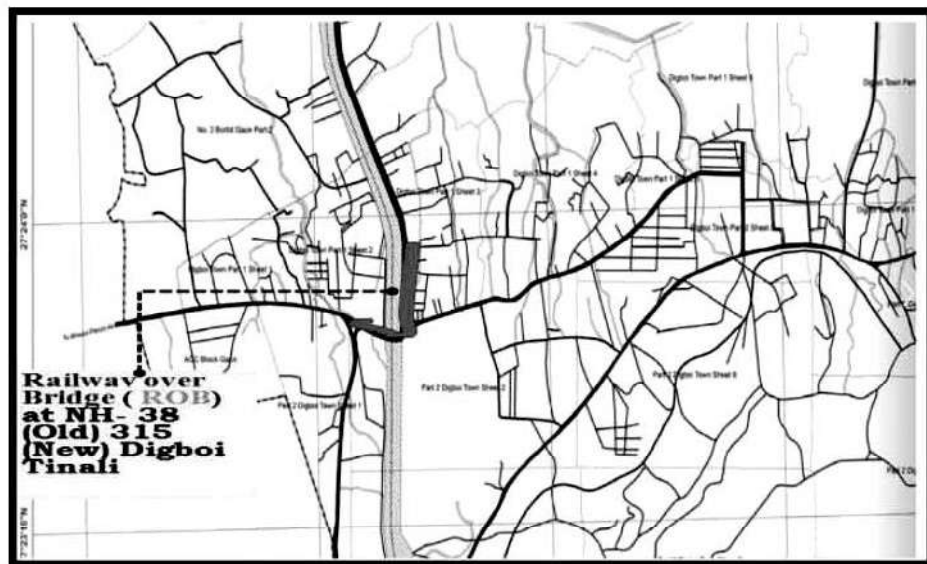
(13) Freight Zone and Logistics: At No.1 Borbil Gaon Part-I



(14) Vendors & Hawkers Market: Behind ASTC bus stand.



(15) Railway Over Bridge (ROB) : At NH-38 (old) 315 (new) Digboi Tinali.



9.4 Indicative Sources of Fund

The ULB and concerned line departments will submit the DPR's to their respective departments for sanctioning fund from State & Central Government under various schemes like NLCPR, NEC, 10% pool, Jal Jeevan Mission fund etc. The ULB's can also adopt the policy of Private Public Partnership (PPP) mode for raising the fund for a few remunerative projects.

TABLE: - 36
Tentative project cost of proposals for Digboi master plan

Sl.No	Name of the proposal	Tentative project cost (In lakhs)	Remarks
1	Widening and improvement of roads		As per the survey.
	street lights	100.00	
	Development of parking area.	100.00	
2	Improvement of existing market situated at Digboi tiniali into a well-planned, people friendly business hub.	500.00	
3	Construction of a Tourist lodge, Marriage Hall and library	1500.00	
4	Construction of a Town Hall, Auditorium and Old Age Home	2700.00	
5	Town planning scheme for all sections of the Society considering the scenic beauty of the town.	5000.00	Or proposal may in PPP mode
6	Construction of Slaughter house.	100.00	
7	Improvement of existing traffic signal points and setting up new ones.	200.00	
8	Setting up of Organic farming industry etc.	100.00	
9	Setting up of Micro Small and Medium Enterprises (MSME).	400.00	
10	Improvement of existing Bus station.	300.00	
11	Construction of Vendor and Hawker market.	100.00	
12	Improvement of existing hospital and dispensaries.	800.00	Health Deptt.
13	Construction of ware house etc.	1500.00	
14	Construction of Indoor stadium	2000.00	
15	System of regular collection and disposal of garbage in the master plan area by the concerned authority.	1500.00	Housing & Urban Dev.

16	Scheme for Solid waste Management system as per waste management Rule, 2016.	7500.00	Housing & Urban Dev.
17	Preparation and execution of a comprehensive drainage master plan.	5000.00	Housing & Urban Dev.
18	Water supply scheme		Concern Deptt
19	Proposal for Fire & Emergency Service		Concern Deptt.
20	Proposal for Cycle Track	100.00	
21	Proposal for Walking Track	100.00	
22	Proposal for Freight Zones & Logistic	3000.00	
23	Effluent Treatment plant (2 Nos)	3000.00	
24	Faecal Sludge Treatment Plant	1000.00	
25	Proposal for improvement of burial and cremation ground.	300.00	
26	Proposal for parks (2 Nos)	1000.00	
27	Protection and preservation of all natural channels, wet lands and ponds etc.	1000.00	
28	Railway over bridge at NH- 315	7500.00	
29	Truck terminus and taxi stand	1000.00	
	Total Amount (Rs)	44800.00	

CHAPTER- 10**10 DISASTER PLAN****10.1 Hazards Specific Proneness in Digboi:****➤ Earthquake: -**

As per the latest seismic zoning map of India, the Digboi master plan falls under High-Risk Zone- V, where a maximum intensity of IX can be expected.

➤ Flood: -

Even Digboi town is also facing urban flooding in many localities due to lack of proper drainage system.

➤ Fires: -

The fire takes places in Digboi due to short circuit in commercial areas, thatched house. Mainly fire takes place from March to April when the climate remains very dry. The district also prone to industrial disaster due to the presence of coal fields in an around Digboi.

➤ Cyclone: -

In Digboi cases related to low density cyclone occurred in some places.

10.2 Need for Disaster Management

Data on disaster occurrence, its effect upon people and its cost to countries, are primary inputs to analyze the temporal and geographical trends in disaster impact. Disaster losses, provide the basis for identifying where, and to what extent, the potentially negative outcomes embedded in the concept of risk is realized. They help to understand where, and to whom, disaster risk becomes impact. They also provide the basis for risk assessment processes, a departing point for the application of disaster reduction measures.

Development cannot be sustainable unless disaster mitigation is built into development process. Investments in mitigation are more cost effective than expenditure on relief and rehabilitation. Prevention and mitigation contribute to lasting improvement in safety and are essential to the integrated disaster management system. Disaster response alone is not sufficient as it yields only temporary results at a very high cost. So, emphasis must be on Disaster prevention, mitigation and preparedness, which help in achieving objectivity of vulnerability reduction.

As per Section 40 of Disaster Management Act, 2005 that every department of the State Government shall prepare a Disaster Management Plan.

10.3 Importance of Putting Disaster Management Plans in Place

Disasters are events that have a huge impact on humans and/or the environment. Disasters require Government intervention. They are not always unpredictable. Floods take place in valleys and flood plains, droughts in areas with unstable and low rainfall, and oil spills happen in shipping lanes. This predictability provides opportunities to plan for, prevent and to lessen the impact of disasters.

Disasters arise from both natural and human causes, and the responses needed could stretch community and government capacity to the limit. Disasters are inevitable although we do not always know when and where they will happen. But their worst effects can be partially or completely prevented by preparation, early warning, and swift, decisive responses.

Disaster management aims to reduce the occurrence of disasters and to reduce the impact of those that cannot be prevented. The Government White paper and Act on Disaster Management define the roles of Local Authorities as well as Provincial and National government in disaster management.

North East Region has been vulnerable to many natural and manmade disasters in the past. We can notice that most of the disasters have occurred within the last two decades, and the frequency, intensity and magnitude of the disasters are ever increasing.

10.4 Plan Objectives

The objectives of the Disaster Management Plan are:

- Disaster management in the routine affairs of the office
- To provide technical and humanitarian assistance during disaster
- Prompt and effective discharge of office responsibilities during disaster situations
- Ensuring safety of office infrastructure, human resource and other assets
- Ensuring safety of the beneficiaries and others
- Speedy restoration after disaster impact
- To conduct trainings and capacity building for effective prevention, mitigation and response for disasters.
- To undertake information, education and communication activities to create awareness among the communities and the general public.

10.5 Likely Geographical Extent and Magnitude / Severity

- 1) The Master plan area is situated on both flat land and hilly areas. The municipal board area and rural area is mainly situated on flat land. Oil township area is situated on both flat and hilly areas. Hence, Digboi is

severely prone to flood. Moreover, some parts of Digboi town are located in very low-lying area with poor drainage system with unplanned development, so there is every chance of flash flood due to heavy rainfall. Such flash floods have been experienced during last five years.

- 2) Assam as a whole is within the Zone V of earthquake zone. Especially Digboi has witnessed a devastating earthquake in 1950. So, it can be said that geographically and geologically Digboi is situated in a very hazards prone zone.
- 3) Chances of Landslide are comparatively less in this region. But fire can break out in the congested residential and commercial areas, market of the town anytime during lean season, even then there is every possibility to have big fire or leakage of hazardous gases from refinery. So is the risk of epidemic in the slum/basti areas. The region has faced cyclones several times in the past. Road accident, rail accident, collapse of multi-storied buildings etc. can occur at any time. Of course, riot is not so common in this region.

10.6 Disaster Management Cycle

In multi-hazard response plan, the disaster management cycle has a significant role to play. The four stages of disaster cycle have their own importance in terms of their implementation during, after and before the occurrence of any disaster.

Pre disaster activities

1. Policy development and National, State, district, local level disaster organization formation
2. Vulnerability and capacity assessment.
3. Prevention and mitigation
4. Preparedness, planning and training



Pre disaster activities

1. Policy development and National, State, district, local level disaster organization formation
2. Vulnerability and capacity assessment.
3. Prevention and mitigation
4. Preparedness, planning and training

During Emergency activities

1. Warning (beginning before the actual event)
2. Evacuation, search and rescue
3. Emergency assistance (relief) – food, water, shelter, medical aid

Post disaster activities

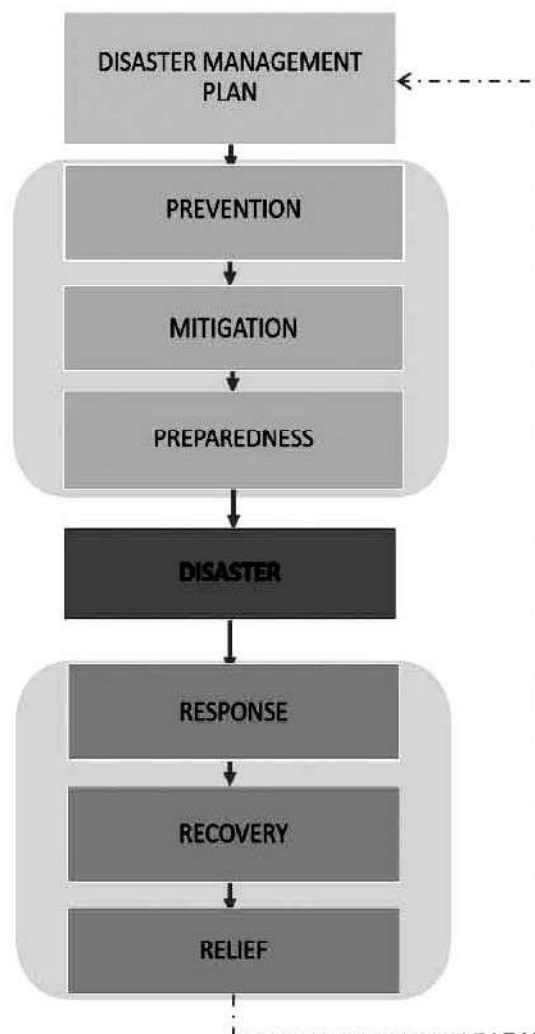
1. Repair and restoration of life lines (power, telecommunications, water transportation)
2. Reconstruction and rehabilitation.

10.7 Formation of Digboi Disaster Management Cell (DDMC)

So, the Master plan recommends for formation of a Digboi Disaster Management Cell (DDMA) in the office of Digboi municipality, as per Section 40 of Disaster Management Act, 2005.

The DDMA has to be constituted with the following functionaries are Chairperson (Chairman), Vice Chairman (Co-Chairperson), Chief Executive office (Executive Office), Members (SDOI, Health, Roads, Building, Industries (Coal) and other relevant department), Nodal Officer (Jr. Engineer).

The DDMA will give emphasis towards the preparation of Digboi Disaster Management Plan. The plan also recommends that the DDMA cell to co-ordinate during emergency with the District Disaster Management Authority (DDMA) located at the Head-Quarter of the District. The DDMA Cell will



provide all the available resources and manpower for Disaster Management. This

Cell will mobilize the service of technical personnel for the damage survey work to help the District Administration.

The DDMA must meet at least once in six months i.e., in the month of March and September before the Disaster Season (Flood & Cyclone) of Digboi town under the chairmanship of the Chairman, Digboi municipal board & to update the plan. For this one month's prior notice should be given to all concerned departments before convening the meeting. Chairman should review the work of DDMA. An emergency meeting will hold whenever information is received regarding calamity.

10.8 Standard Operation Procedure (SOP)

The Master plan recommends the DDMA for formulation of Standard Operation Procedure (SOP) for automatic response of the members during disaster.

- Written guideline that precisely defines how operations are to be carried out.
- An organizational directive that establishes a standard course of action.
- Written guidelines that explain what is expected and required of the personnel.
- Standardization of activities: -
 - Identify planned and agreed upon roles & actions.
 - Promotes coordination and communication amongst personnel.
 - Simplify decision making during potentially stressful conditions.

Proper implementation of Assam Notified Urban Area Building Rules – 2014 (ANUABR) & Sensitization among stakeholders engaged for construction work / owners to use disaster resistant technologies

10.9 Rainwater Harvesting

Digboi Zone has experienced heavy rainfall during summer season due to the tropical monsoon in the region. So, the plan recommends adoption of rainwater harvesting system in construction activities that will reduce the volume of artificial floods in the Master plan Area and also help to maintain the ground water level.

10.10 Do's & Don'ts during

a) EARTHQUAKE



b) FIRE



END

ANNEXURE-I

TABLE NO-37
Actionable points for various line departments

Sl. No.	Name of line Department/Agency/	Proposal	Action to be under taken towards implementing proposal
1	Digboi Municipal Board	a) Solid Waste Management b) Construction of vendor & Hawker Market c) Bus Stand & Parking d) Parks e) Improvement of existing market situated at Digboi tinali. f) Slaughter house g) Freight & logistic, Warehouse, Truck Terminus & Taxi stand h) Improvement of existing traffic signal points and setting up new ones i) Proposal for improvement of burial and cremation ground.	Line department shall prepare concept paper / DPR whichever is applicable as per directive of the government for consideration of funding under 10% pool fund, NLCPR, NEC, State Finance Commission, CSR Fund & Pvt. Sector etc. in a phased manner but during the Master plan period i.e. up to 2041. A few selected schemes like housing colony can be consider under PPP mode.
2	Public Works Department & Digboi Municipal Board	a) Footpath & cycle Track b) Road Signage & Street Furniture c) Walking track	
3	APDCL & Digboi Municipal Board	Improvement of street lighting	
4	Public Administration and Digboi Municipal Board	Construction of Town Hall, Auditorium & Library	
5	Public Works Department and Railway	Widening of Road & ROB	

6	Digboi Municipal Board and Town & Country Planning Assam	Preparation and execution of a comprehensive drainage master plan, Town Planning Scheme,	
7	PHE Department & Assam Urban Water Supply and Sewerage Board	Water Supply Scheme	
8	Education Department, NGO and Private Agency	Education Facilities	
9	Health Department, NGO and Private Agency	Improvement of existing hospital and dispensaries	
10	Sports & Youth Welfare Department & Sports Association	Development of playground and construction of stadium	
11	District Industries & Commerce Center	MSME	
12	Social Forestry Department	Roadside Plantation & Urban forestry	
13	Agriculture	Urban Agriculture & Organic farming	
14	Emergency & Fire service	Fire hydrant, Fire & Emergency Service Station	
15	Water Resource Dept. & ULBs	1. Protection and preservation of low lying area, ponds & natural channels etc. 2. ETP & FSTP	
16	Tourism	Tourist lodge	